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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

40th meeting
Strasbourg, 30 November - 4 December 2020

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REPORTING UNDER RESOLUTION NO. 8 (2012)
PERIOD 2013-2018

FINAL REPORT

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1. Context and history

In 2012, the Standing Committee of the Bern Convention adopted Resolution No. 8 (2012) regarding the national designation of adopted Emerald Network sites and the implementation of management, monitoring and reporting measures. Following the instruction on reporting in article 4 of this resolution, the Group of Experts on Protected Areas and Ecological Networks prepared a reporting format which was adopted in 2017 and published in document T-PVS/PA (2017) 9 for the reporting period 2013-2018. The format is accompanied with detailed guidelines, part 1 (T-PVS/PA (2017) 17) and part 2 (T-PVS/PA (2018) 10).

The format itself is fully harmonised and standardised with the reporting formats of Art. 12 and Art. 17 (under the EU Habitats and Birds Directives) but takes into account birds as part of the same legal framework and the Resolution No. 8 (2012) has only one format for all features.

As foreseen in Resolution No. 8 (2012), the reporting period is 6 years and the first reporting round was due in 2019 and covered the period 2013-2018, coinciding with the reporting rounds under the Art. 17 and Art. 12 of the EU Nature Directives.

Knowing it is the first reporting round for non-EU countries and recognising the importance of the reporting exercise, the Group of Experts also agreed to limit the number of features (species and habitats) to report on. Forty six features were selected and each country was expected to report on approximately 35 features to balance the efforts (T-PVS/PA (2017) 11)[1]. This first reporting round is clearly more important for building up experience and capacity. It is even to be considered as a test period for the future reporting periods.

In 2018, a data entry tool was created based on the Art. 12 and Art. 17 tools, but merging the two into one tool for Resolution No. 8 (2012).

During 2018 and 2019, training workshops were organised with the non-EU Contracting Parties to the Bern Convention to explain all the principles of the reporting and data requirements. Countries were asked to create a number of test forms. The final database containing the reports for each country had to be delivered on the Common Data Repository (CDR) of the European Environment Agency (EEA) by the end of December 2019.

This document represents a general overview of the delivered data and an exploration of possible scientific analysis. In contrast to the EU State of Nature Report, this report aims at describing the processes involved and to show examples of results rather than indicating the individual conservation status for the features involved. The main aim was to harvest the results from this reporting period to be able to start thinking and advice in the framework of the next reporting period.

Most of the documents referred to can be found on the Reference Portal of the reporting under Resolution No. 8 (2012): https://www.coe.int/en/web/bern-convention/reporting-res.-8-2012-. All other documents or information sources are indicated in appropriate footnotes.

[1] https://rm.coe.int/subset-of-species-from-resolution-no-6-1998-and-habitats-from-resoluti/168075fd56

2. Opportunities and limitations

Information on the conservation status of protected species and habitats can be used for different purposes: nature conservation and resource administration, research and education. In this chapter we share some important observations about data collected under the current Resolution No. 8 (2012) reporting round and outline opportunities and also some limitations in data use.

It is important to stress that data collection under Resolution No. 8 (2012) reporting is the same as for the Habitats Directive Art. 17 and Birds Directive Art. 12 reporting process. The contents of the (xml-format and MS Access) databases which the Contracting Parties to the Bern Convention and the EU Member States use as a reporting format are harmonised and there are only minor differences, mainly as a result of the different habitat classifications (i.e. Habitats Directive Annex I and EUNIS for Resolution No. 4 (1996)).

This enables various opportunities to analyse, arrange and present data from EU and non-EU countries **together**. In our opinion, it is very difficult to focus only on non-EU countries. Even if all non-EU Contracting Parties would have participated in this reporting test round, most of them are scattered alone or in small groups across the European continent and it would be difficult to perform meaningful analyses in isolation from the EU data (Figure 1). In addition, if summarising of reporting data makes sense for the EU because it is a political union of countries, this is not the case with other Parties to the Bern Convention.

A **B**

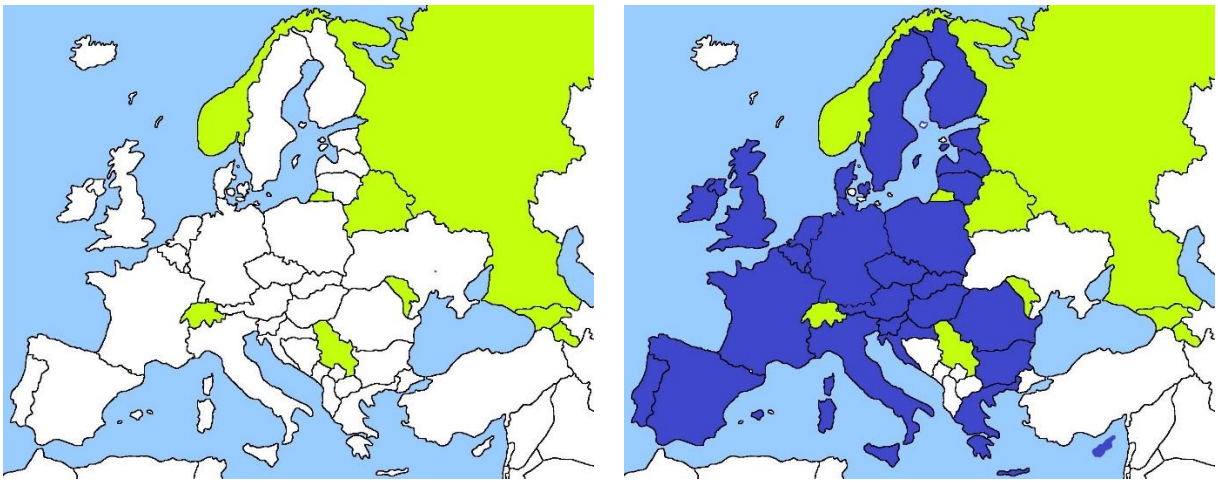


Figure 1. Distribution of countries having reported on the conservation status of species and habitats. Dark blue – EU countries, Green – non-EU countries, parties to the Bern Convention and the Russian Federation. Figure A shows Parties to the Bern Convention which have submitted data under the reporting trial in 2019. Figure B adds the EU Member States[2].

Analyses at Pan-European level are especially important for migratory and wide-ranging species. For them isolated conservation efforts in some countries may not bring desired results, thus conservation measures should be planned at least at the Pan-European context. The contribution of non-EU Contracting Parties is particularly important for features where significant proportions of their global resource is situated outside EU (see Chapter 5 below).

Of course, authorities and the general public could be interested to examine the general status of protected species and habitats in a particular country. For this purpose, in the EU, such information is summarised in the so called "national summary dashboards"[3]. Here information and statistics are arranged by country on different topics such as status, trends, pressures and threats, representativeness in the Natura 2000 network and conservation measures. Yet, for the reporting under Resolution No. 8 (2012) round in the non-EU Contracting Parties such presentation of information is not feasible because it was designed only as a test and covered **only a number of selected species and habitats** (< 10% of the total number of features listed in the complete

[2] For this report and all maps shown, the Eurostat guidelines on the representation of the UK apply: "...the withdrawal of the United Kingdom from the EU does not mean that history is to be re-written. Maps and visualisations that are clearly meant to depict the situation before the date of withdrawal and whose scope does not go beyond January 2020, are in principle not to be modified."

[3] https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards

checklists of the reporting under Resolution No. 8 (2012)). It would be premature to judge about the general status of wildlife in a country based only on this sample.

Very few people use the xml-format or MS Access on a daily basis and data presentation in a raw database is quite heavy and not user-friendly. In the EU, specific Article 12 and Article 17 web-tools[4] are offered to users. Using this tool it is very easy to search for conservation status and many other elements (such as population, area, range, trends etc.) for every species and habitat of Community interest by country and by bio-geographical region (see Chapter 6 below for more details). Most information is presented in a tabular format, but the tool also includes distribution maps, general information on species (factsheets) and audit trail of reporting history. Ideally in the future data collected within the reporting under Resolution No. 8 (2012) could be presented together with EU data but obviously it would require special arrangements with the EEA as owner of this particular webpage. By the time of writing this report, it is generally accepted such tool should become available, but no such specific agreement was already reached. It is hoped there will be opportunities to develop such pan-European tool for browsing the reported data together from EU and non-EU countries. Meanwhile, the following chapters provide examples of some possible analyses and ways of data presentation.

It is necessary also to mention one important difference between Art.17 and Art.12 which is also reflected in the reporting under Resolution No. 8 (2012) procedures. The key difference is that for bird species, unlike for non-avian species and habitats, the report itself does not include a final conclusion about the current conservation status. The report includes only all elements which are necessary to draw the conclusion. In the EU, the final conclusion is performed by BirdLife International as a separate (second) step in the process. This process is described in Appendix 5 of this report. On the other hand, BirdLife International has also the responsibility to write a Pan-European report on the conservation status of birds, which includes countries having reported under Resolution No. 8 (2012). The report is scheduled for spring 2021[5]. It has been agreed with BirdLife International, the reported data will be taken on board for the analysis of the Pan-European conservation status for the 12 bird species for which data have been reported under Resolution No. 8 (2012). Moreover, BirdLife International has collected similar data through their own network of BirdLife International partners, including countries who have not reported under Resolution No. 8 (2012). For this reason, we delimit our analyses on birds for this report to the elements which can be found in the existing database.

3. Report submissions and completeness

3.1 Tabular data as exported from the Resolution No. 8 (2012) IT-tool

All countries have used the tool developed for the reporting under Resolution No. 8 (2012) to deliver the tabular data. The first real version of the tool became available in April 2019. This version was presented during the training workshop organised in collaboration with the EEA in May 2019 in Paris. Gradually, countries started to use the tool and reported a number of problems. They were all fixed and a new version of the tool soon became available. The last version is available on the Reference Portal of the reporting under Resolution No. 8 (2012) and dates back to December 2019.

To be able to deliver the data to the Common Data Repository (CDR), countries had to export the data to xml-formatted files using the export routine of the tool. The data are subsequently delivered as four files:

- General_report.xml (Annex A of the reporting format)
- Species_reports.xml (Annex B of the reporting format)
- Habitats_reports.xml (Annex D of the reporting format)
- Birds_reports.xml (Annex F of the reporting format)

The tool also includes the agreed checklist that is listing the presence within each of the countries of the 46 species and habitats for which a report is expected. As this is the first (test) reporting round, the checklist is subject to possible changes according to any new available scientific information. The tool allows countries to amend the checklist and to record the changes accordingly. The modified checklist is also exported by the tool and delivered in three xml-files:

[4] https://nature-art17.eionet.europa.eu/article17/reports2012/ and https://nature-art12.eionet.europa.eu/article12/

[5] BirdLife International (in prep) European Red List of Birds. Deliverable to the European Commission (DG Environment) in 2021 under Service Contract ENV.D.3/SER/2018/0018

- Birds_checklist.xml
- Habitats_checklist.xml
- Species_checklist.xml

The tool itself is using MSAccess for data storage. All the above-mentioned information is stored in one MSAccess file for each country. Reporting countries were asked to also upload this file to be able to verify the export procedures.

Figure 1.A illustrates the 8 countries which delivered data within the reporting under Resolution No. 8 (2012). To be able to start efficient analysis, the individual country data needed to be merged. Unfortunately, no standard merging procedures for xml-files are available and it was decided to directly work with the MSAccess file format. All the data related to the full reporting format (4 annexes) are stored in 19 MSAccess tables.

Data files related to the general report (Annex A):

- Data_gmeasures
- Data_greport

Data files related to the information for species (Annex B):

- Data_species
- Data_species_regions

Data files related to the information for habitats (Annex D)

- Data_habitats
- Data_habitattype_regions

Data files related to the information for birds (Annex F)

- Data_bgmeasures
- Data_bgmonitoring
- Data_bgpublications
- Data_birds
- Data_bmeasures
- Data_bmeasures_info
- Data_bpressures_threats
- Data_bpressures_threats_info

Data files in common for species and habitats (Annex B and D)

- Data_measures
- Data_measures_info
- Data_notes
- Data_pressures_threats
- Data_pressures_threats_info

As explained in chapter 2, it is very difficult to focus the analysis only on non-EU Contracting Parties. For this reason, it was decided to merge the data collected under Resolution No. 8 (2012) with the data of the EU-reporting under the Nature Directives (Art. 12 and Art. 17). Data structure, table names and field definitions are fully harmonised and merging data from the different sources was feasible. Only the EU-data related to the species and habitats as identified in the checklist of the reporting under Resolution No. 8 (2012) were merged. The resulting tables contain the data for 46 features in 36 countries (28 EU and 8 non-EU countries). The tables are as follows (BC=Bern Convention, PEU=Pan-European):

- BC_RES8_PEU_data_birds
- BC_RES8_PEU_data_bpressures_threats
- BC_RES8_PEU_data_bpressures_threats_info
- BC_RES8_PEU_data_habitats
- BC_RES8_PEU_data_habitattype_regions
- BC_RES8_PEU_data_pressures_threats

- BC_RES8_PEU_data_pressures_threats_info
- BC_RES8_PEU_data_species
- BC_RES8_PEU_data_species_regions

The database also includes a number of lookup tables and reference lists:

- lu_threats
- ref_habitats code list
- ref_habitats_code link annexI
- ref_species code list
- ref_species_code list link annexII

In this chapter, only the data for the 8 countries having delivered data within Resolution No. 8 (2012) by the end of 2019 were used. For all other analysis in the report the complete set of merged data from 36 countries was used (28 EU and 8 non-EU countries).

The number of reports delivered by countries are shown in Table 1 for bird species, Table 2 for non-avian species and Table 3 for habitats. For non-avian species and habitats, the reporting is at the level of the biogeographical regions within the country where the species occurs as agreed in the checklist. For birds, the reporting is at country level without taking into account the biogeographical regions, but different reports have to be delivered for each of the population seasons as identified in the checklist (Breeding, Winter and Passage).

The details of the data delivery is given in the Appendices (i.e. Appendix 1: non-avian species, Appendix 2: habitats, Appendix 3: birds)

Table 1.

Number of reports per country per bird species according to the population seasons (Breeding, Winter and Passage) for which a report is delivered (sorted by species code)

Species code	Species name	AM	BY	CH	GE	MD	NO	RS	RU
A021	Botaurus stellaris	1	1	2	3	1		2	
A030	Ciconia nigra	1	1		2	1		2	1
A060	Aythya nyroca	1	1	3	1	1		2	1
A091	Aquila chrysaetos	1	1	2	1		2	2	
A122	Crex crex	1	1	2	2	1	2	2	
A127	Grus grus	1	1		2	1	2	2	
A151	Philomachus pugnax	1	2	1	1	1	2		
A196	Chlidonias hybridus	1	1		1	1		2	
A215	Bubo bubo	1	1	1	1	1	2	1	
A231	Coracias garrulus	1	1		2	1		2	
A239	Dendrocopos leucotos		1	1	1	1	2	1	
A339	Lanius minor	1	1			1		2	

Table 2.

Number of biogeographical regions for which a report is delivered per country per non-avian species (sorted by species code)

The maximum number corresponds to the number of biogeographical regions occurring in the country. (Armenia = 2, Belarus = 2, Switzerland = 2, Georgia = 3, Republic of Moldova = 2, Norway = 4, Serbia = 3, Russian Federation = 5)

Species code	Species name	AM	BY	CH	GE	MD	NO	RS	RU
1014	Vertigo angustior	1	2	1	2	1	2		3
1032	Unio crassus		2			1		2	
1042	Leucorrhinia pectoralis	1	2	1	3	1	2	2	
1060	Lycaena dispar		2	1	3	1		3	
1083	Lucanus cervus		1	1	1	2		3	
1084	Osmoderma eremita		2			2	1	2	
1096	Lampetra planeri		2	2			2		
1134	Rhodeus sericeus amarus	1	2	1	1	2		3	
1146	Sabanejewia aurata	2	1		2	2		2	
1163	Cottus gobio		2	2		1	2	2	
1193	Bombina variegate			2		1		3	
1220	Emys orbicularis	1	2	1	3	2		2	
1308	Barbastella barbastellus		2	1	3	1		2	
1352	Canis lupus	2	2	2	3	1	2	3	
1354	Ursus arctos	2	2		3		2	2	
1355	Lutra lutra	2	2		3	2	4	2	
1428	Marsilea quadrifolia			1	1	1		2	1
1528	Saxifraga hirculus	1	1	1			2		
1617	Angelica palustris		2						
1758	Ligularia sibirica	2			2				
1902	Cypripedium calceolus		2	2		1	3	1	5
1939	Agrimonia pilosa		2		2				
2098	Paeonia tenuifolia	1			2			2	
2292	Frittilaria montana							3	
6216	Hamatocaulis vernicosus		2	2	1		3	1	

Table 3.

Number biogeographical regions for which a report is delivered per country per habitat type (sorted by habitat code)

The maximum number corresponds to the number of biogeographical regions occurring in the country. (Armenia = 2, Belarus = 2, Switzerland = 2, Georgia = 3, Republic of Moldova = 2, Norway = 4, Serbia = 3, Russian Federation = 5)

Habitat code	Habitat Title	AM	BY	CH	GE	MD	NO	RS	RU
B1.6	Coastal dune scrub				1				
C1.25	Charophyte submerged carpets in mesotrophic waterbodies		2	2				3	
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	2	2	2	2	2	3	1	
E1.3	Mediterranean xeric grassland	2			1				
F3.241	Central European subcontinental thickets				1			2	
G1.6	Fagus woodland	1		2	2	1	2	3	3
G1.A4	Ravine and slope woodland	1	2	2	2	2	2	3	5
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	2			3				
H1	Terrestrial underground caves, cave systems, passages and waterbodies	2		2	3	1		3	

As indicated before, the Standing Committee to the Bern Convention agreed in 2017 upon a selection of species and habitats for which countries are requested to report on. This list is based on the known distribution, resulting from the biogeographical evaluation process under the Emerald Network. All species groups are represented and the selection criteria were developed in such a way to harmonise the number of reports between countries. (see TPVS-PA 2017-10)[6]. Larger countries have a tendency to have more species and habitats and also more biogeographical regions, multiplying the number of reports to be delivered. For this reason, Ukraine and the Russian Federation received exemptions for reporting for 15 of the identified features to ensure a more or less equal effort for all countries.

In 2018, an officially agreed checklist was designed defining a detailed list of features and biogeographical regions for which countries needed to submit a report. For birds, the reporting is at country level but the population season for which separate reports need to be created are identified. The complete checklist is available on the Reference Portal of the reporting under Resolution No. 8 (2012) (pa05e_2018_Res8_checklists)[7]

Table 4 presents an overview of the data delivery for species and habitats according to the initially agreed checklist. All countries reported more than 75% of the expected reports, except the Russian Federation. Belarus reported all features in the checklist. We should admit that the size and the administrative complexity of the Russian Federation is for sure hampering the data collection. The fact that the Russian Federation has delivered at least reports on few features can be seen as a good start to build up capacity and knowledge for future reporting activities. For the other countries, the reasons for not delivering a report for some features is unknown, but possibly due to a mixture of lack of data, lack of expertise, or no specific interest for the moment for some of the features. It should be stressed, that the figures only represent the deliveries of reports without any evaluation of the technical and scientific quality.

[6] https://rm.coe.int/selecting-a-subset-of-species-from-the-resolution-no-6-1998-and-habita/1680744322
[7] http://rm.coe.int/species-and-habitats-checklists-for-the-reporting-under-resolution-no-/16808c610d

Table 4.

Number of reports for birds, non-avian species and habitats delivered and percentage according to the agreed checklist

	Birds			Non-avian Species			Habitats			Total	
Country	In checklist but not delivered	Delivered	% delivered	In checklist but not delivered	Delivered	% delivered	In checklist but not delivered	Delivered	% delivered	Delivered	% delivered
AM	0	11	100	4	16	80	0	10	100	37	90,24
BY	0	12	100	0	37	100	0	6	100	55	100,00
CH	4	6	60	2	21	91	0	10	100	37	86,05
GE	1	11	91	1	35	97	0	15	100	61	96,83
MD	1	10	90	3	22	88	2	5	71	37	86,05
NO	0	6	100	5	25	83	6	7	53	38	77,55
RS	0	11	100	11	40	78	7	14	66	65	78,31
RU	17	2	10	51	9	15	24	8	25	19	17,12
Total	**23**	**69**	**75**	**77**	**205**	**73**	**39**	**75**	**66**	**349**	**71**

The details of the data delivery is given in the Appendixes (i.e. Appendix 1: non-avian species, Appendix 2: habitats, Appendix 3: birds)

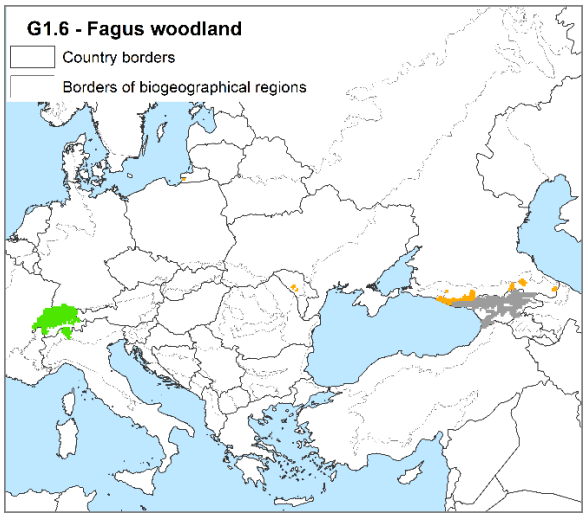
3.2 Distribution maps

The spatial layer for the distribution maps had to be created using the standard Pan-European grid system (10 x10 km grids). The standard grid-maps were created by the EEA as individual country files and available from the Reference Portal of the reporting under Resolution No. 8 (2012). In principle, as explained to the countries during the training workshops, the distribution maps should have been delivered in three layers, one for each feature group (birds, non-avian species and habitats). Unfortunately, no strict rules were instituted. As a consequence, some countries delivered maps for individual feature. All maps were uploaded in the "Resolution 8" country folder on the CDR.

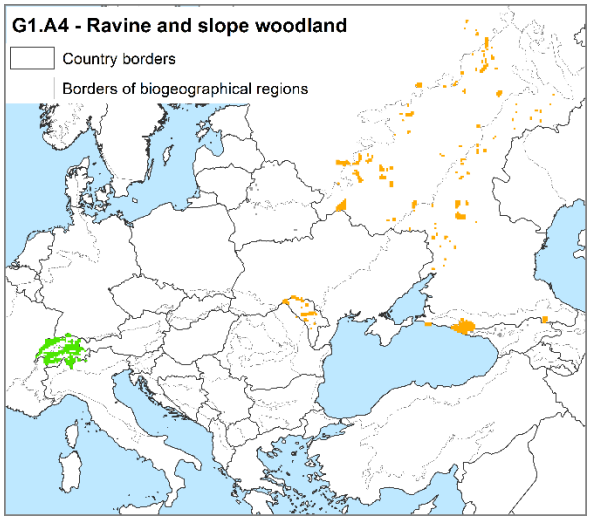
Appendix 4 represents an overview of the feature distribution maps per country and pointing to possible errors or problems. The numbers in the overview represent the number of 10 x10 grid cells where the feature has been reported to be present.

As indicated above, there was no opportunity for this reporting period to go back to the countries and ask for amendments or corrections to the data delivery. The maps below should be seen as examples to illustrate the data deliveries. Unfortunately, by the time of writing the report, it was not yet possible to merge the distribution maps of Art. 17 and Art. 12 reporting. The maps below show the grid cells where the feature is reported to be present, coloured according to the conservation status as given by the country in the tabular data.

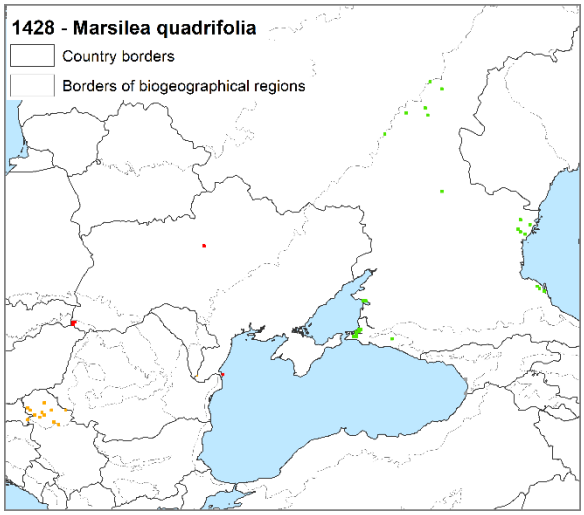
It should be stressed, for many countries this is the very first time such mapping exercise is performed. As a consequence, the results should be seen as a first try-out and will hopefully serve as a start for future enhanced mapping exercises.



Distribution map as given in the 10 x 10 km grid maps for **G1.6 Fagus Woodland**. Colours represent the conservation status as given by the countries in the tabular data (unfavourable-inadequate (amber), favourable (green) and grey (unknown))



Distribution map as given in the 10 x 10 km grid maps for **G1.A4 Ravine and slope woodland.** Colours represent the conservation status as given by the countries in the tabular data (unfavourable-inadequate (amber) and favourable (green))



Distribution map as given in the 10 x 10 km grid maps for **Marsilea quadrifolia**. Colours represent the conservation status as given by the countries in the tabular data (unfavourable bad (red), unfavourable-inadequate (amber) and favourable (green)). Data for Ukraine as taken from the try-out deliveries for the preparatory workshop in 2019.

4. Quality of data for the assessment of the conservation status

The assessment of the conservation status of species and habitats depends on various parameters such as population size (or area for habitats) and trends, range size, future prospects and others. In order to be able to report these values, countries need to have a solid knowledge base which is grounded on large-scale inventories and long-term monitoring within each country.

The quality of data is determined by various factors like duration, geographical coverage, frequency and methods used in specific research projects or programmes. The quality of data is an important, if not a key, aspect showing how durable are the conservation status assessments submitted by countries under the EU Habitats Directive (Art. 17) and Birds Directive (Art. 12), and Resolution No. 8 (2012) for non-EU countries. The range of reporting parameters in the reporting formats are very diverse and often very detailed.

The self-assessment by the countries on the quality of the key parameters determining the final conservation status assessment is an integral part of the database. Parameters such as population size, population trend, or habitat area and habitat trend are accompanied with the associated fields named "Method used" which are supposed to indicate the assumed data accuracy which depends on the scientific or situational approaches behind the studies undertaken. "Methods used" foresee following coding and categories:

3 = Complete survey or a statistically robust estimate

2 = Based mainly on extrapolation from a limited amount of data

1 = Based mainly on expert opinion with very limited data

0 = Insufficient or no data available

In practice, there is also a fifth category "unreported", because countries may have submitted a reporting value but not attached the "quality tag". In the databases this appears as a blank data field.

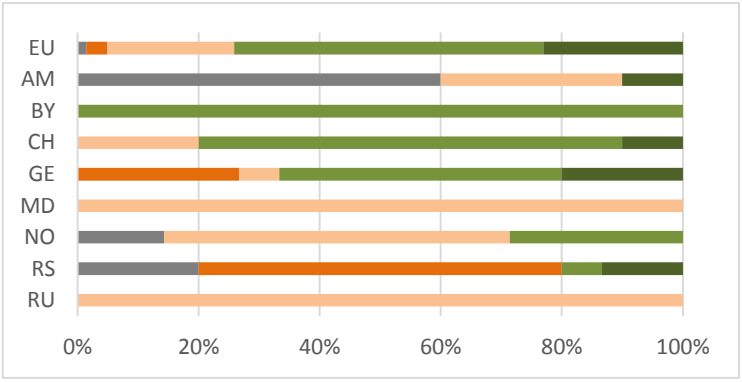
Below in Figures 2 to 4, basic statistics are presented about the data quality as reported by the countries. The charts present individual characteristics of each reporting country with a comparison to the EU average. It should be noted that the purpose of the comparison, the same selection of species and habitats was considered for both EU and non-EU countries. In these analyses we focused only on short-term trends, as it was obvious that much less data are available for the long-term trends.

Figures 2 to 4 can be best viewed by examining the width of "green parts" of each country bar. Both dark and light green colours indicate the two "acceptable" categories of quality: complete survey and extrapolation based on partial data (see above). The ultimate objective for any country should be to achieve a quality assessment corresponding to one of the green colours. The next category, i.e. light orange (i.e. some data and expert opinion) is also acceptable to a certain extent and is definitely better than "insufficient" or "unreported".

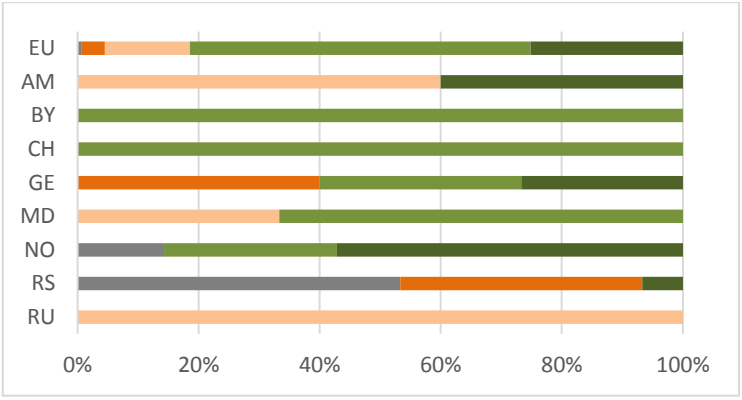
The small sample sizes from the non-EU countries may result in biased proportions. For example, a high ratio of Russian Federation "green assessments" (in case of non-avian species) could be explained by the fact that this country reported only on a selection of 9 possibly well-known species. A similar observation applies for habitats in the Republic of Moldova (only 6 habitats reported). Quality assessments of birds distribution data are also very questionable, and several countries have not indicated any quality category at all. Regarding habitats, some countries like Belarus, Switzerland, and Norway reported very good data. However the fact that in some parameters they are much better than the EU average may cast some doubts about realism of these assessments.

Presumably in many countries there are also large differences in data quality between different taxonomic groups of non-avian species, but this is more a speculation because the current reporting sample size does not allow reliable comparisons within different groups.

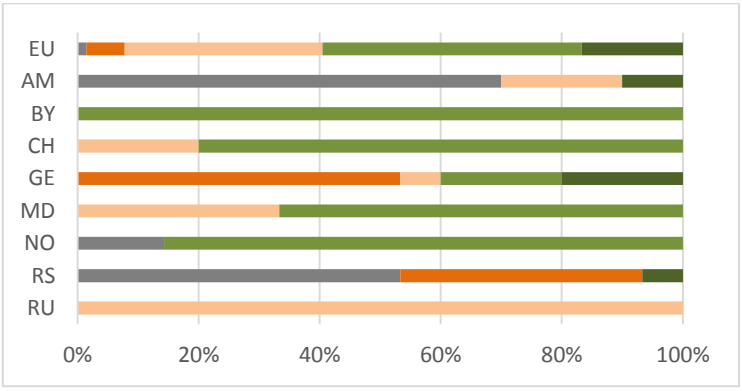
A. Range trend



B. Coverage



C. Coverage trend



D. Habitat condition

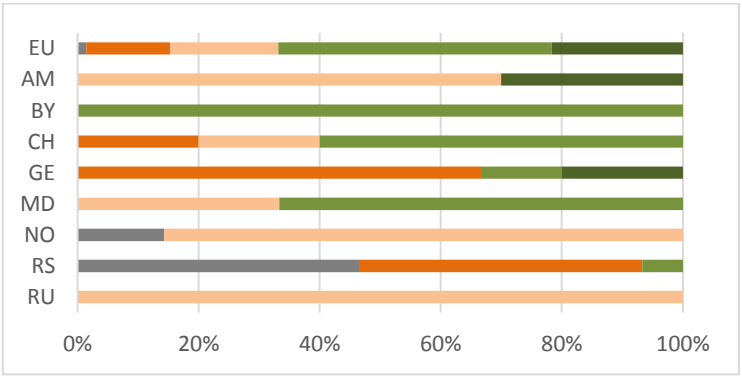
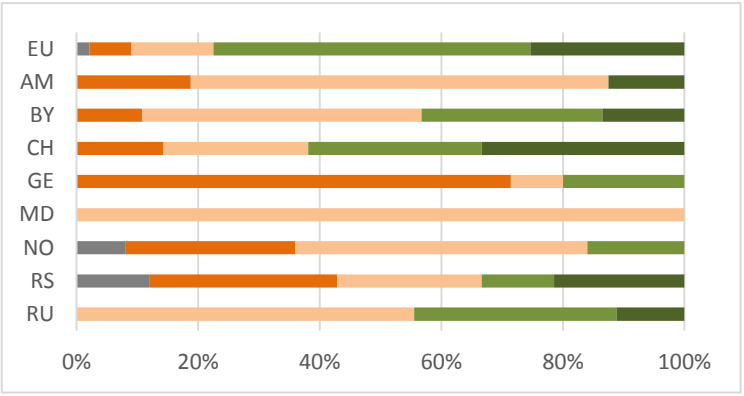
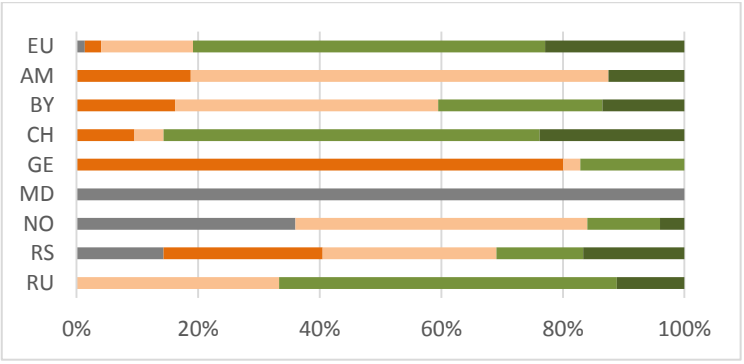


Figure 2. Proportions of categories of quality self-assessments by reporting countries for ***habitats*** compared to the EU average. Categories of quality: dark green: complete survey or a statistically robust estimate, light green: based mainly on extrapolation from a limited amount of data, light orange: based mainly on expert opinion with very limited data, dark orange: insufficient or no data available, grey: quality not reported.

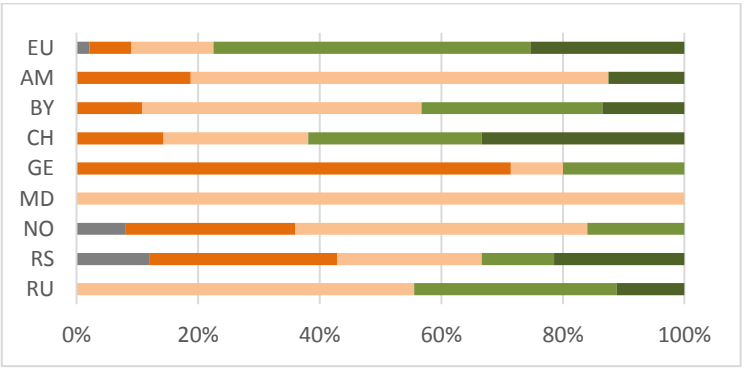
A. Range trend



B. Population size



C. Population trend



D. Typical habitat trend

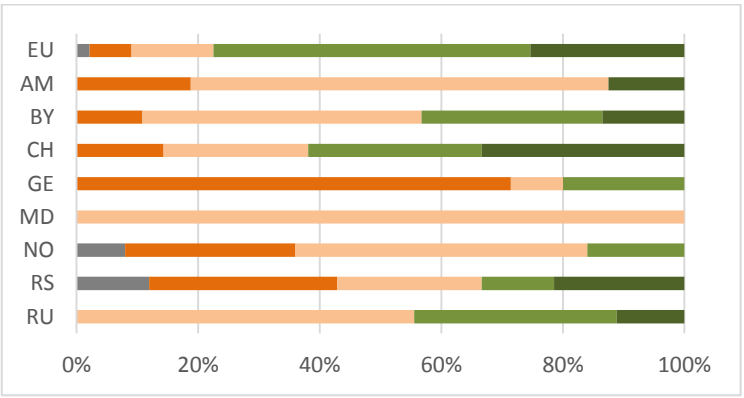
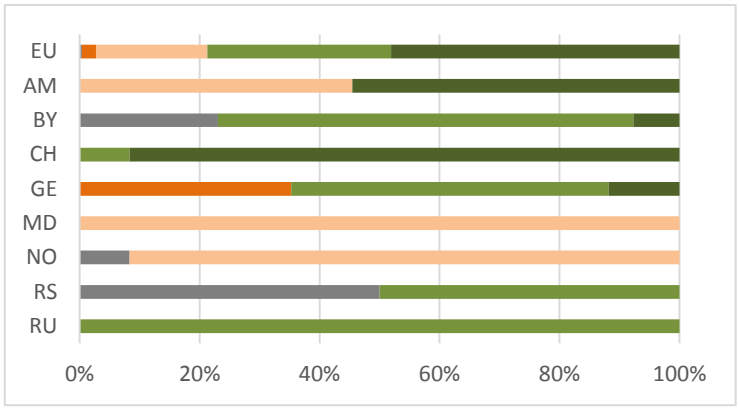
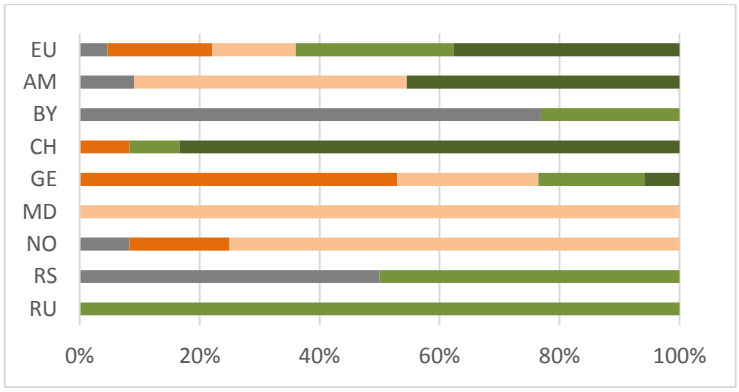


Figure 3. Proportions of categories of quality self-assessments by reporting countries for ***non-avian species*** compared to the EU average. Categories of quality: dark green: complete survey or a statistically robust estimate, light green: based mainly on extrapolation from a limited amount of data, light orange: based mainly on expert opinion with very limited data, dark orange: insufficient or no data available, grey: quality not reported.

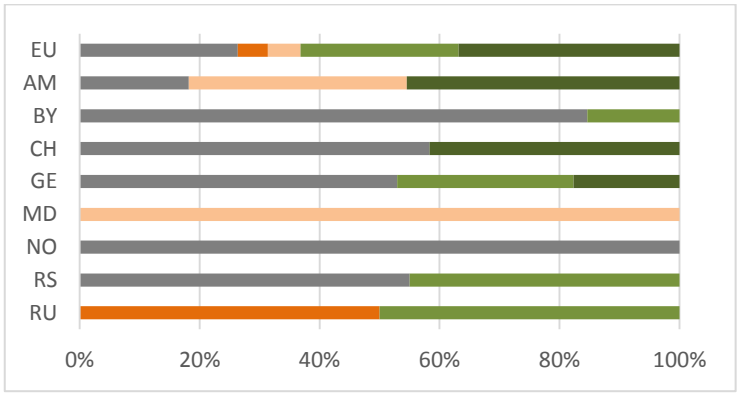
A. Population



B. Population trend



C. Distribution



D. Distribution trend

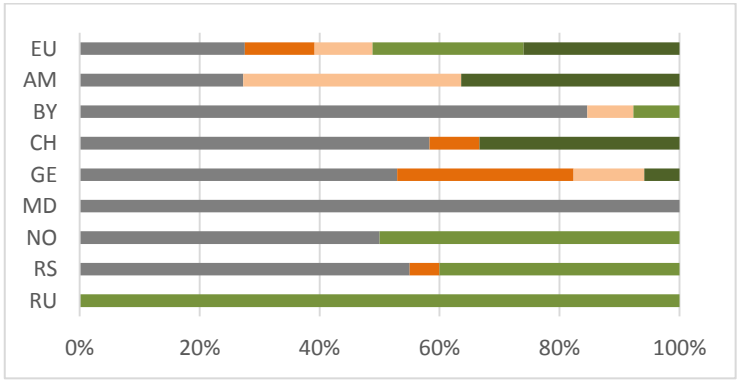


Figure 4. Proportions of categories of quality self-assessments by reporting countries for ***bird species*** compared to the EU average. Categories of quality: dark green: complete survey or a statistically robust estimate, light green: based mainly on extrapolation from a limited amount of data, light orange: based mainly on expert opinion with very limited data, dark orange: insufficient or no data available, grey: quality not reported.

5. Species and habitats resources in non-EU Contracting Parties, compared to EU countries

The conservation status of species and habitats ideally should be viewed and analysed at Pan-European level thus ignoring political sub-divisions of the continent as nature knows no boundaries. Apart from the territorial integrity aspect (see Chapter 2 above) it is also important to recognise how the species and habitat resources are shared across the two country groups (i.e. non-EU and EU) in the Pan-European context.

For example, if non-EU countries hold significantly large parts of the all-European resource, then the conservation status in these countries may strongly affect EU-based conservation efforts. If non-EU countries host strongholds of certain species, then habitat conservation measures in neighboring EU countries aiming to recover or to increase local populations may bring more immediate and better results if source populations are situated in a greater distance. It is also important for mobile wide-ranging animals. For example, it is well known that many large carnivore populations in Finland, the Baltic States, and Poland are supported by individuals arriving from the Russian Federation and Belarus.

In this chapter we analyse the populations in non-EU countries versus the populations in EU countries for **7 bird species** and for **2 habitat types** which were reported on by the highest number of countries to enable meaningful comparisons (Figure 5 and 6). Similar analyses can be more difficult for non-avian species. Despite of having agreed population units indicated in the checklist for each of the features individually, countries may have used population units different from the checklist. In such cases a substantial additional work is required to interpret and commute various units into one common unit to enable any calculations and analyses at Pan-European level.

It can be observed that non-EU countries do host significant breeding populations of the 7 species considered (Figure 5). For some species such as golden eagle, ferruginous duck, black stork and the Eurasian roller the populations in the non-EU countries group can even be considered as very important (i.e. over 25% of the whole Pan-European resource). Similarly, the two habitat examples show that non-EU countries host very significant proportions of habitat areas (Figure 6). For example, Norway alone presents very high proportions of both habitats in the Atlantic bio-geographical region.

Yet the results presented in Figures 5 and 6 should be viewed with caution because the provided statistics are based only on countries which reported particular species, but they do not necessarily represent the whole species' and habitats' distribution range in Europe. Particularly it applies to the non-EU countries where the reporting obligations were not seen as mandatory, and countries have reported somehow selectively, probably based on the availability of data. For example, two of the largest countries, with presumably large resources, the Russian Federation has reported only few species and Ukraine has unfortunately reported no data even when they showed large interest during the preparatory seminars. Another problem was that Romania (in EU) reported obviously wrong habitat areas (for the rich fens, tall herb fens, calcareous flushes), thus calculated proportions can be biased. There was also an attempt to do similar analyses with habitat "Caves (H1)". Unfortunately, Georgia (where this habitat type is well represented), did not report exact areas, thus any calculated proportions with existing data would be biased.

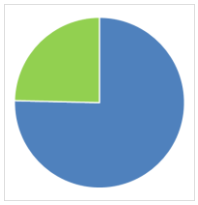
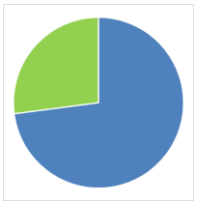
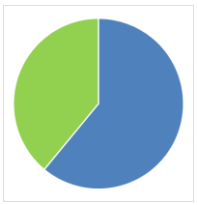
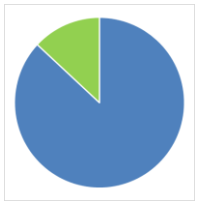
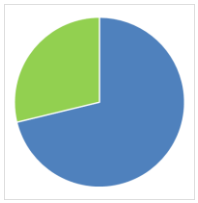
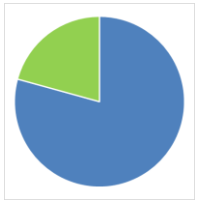
Species	By minimum estimate	By maximum estimate	Resolution No. 8 (2012) stronghold countries
Golden eagle *Aquila chrysaetos*			Norway Non-EU reporting countries: AM, BY, CH, GE, RS, NO
Ferruginous duck *Aythya nyroca*			Serbia, Russian Federation Non-EU reporting countries: AM, BY, CH, MD, RS, RU
Great bittern *Botaurus stellaris*			Belarus Non-EU reporting countries: BY, GE, MD, RS
Eagle owl *Bubo bubo*			Belarus, Georgia Non-EU reporting countries: AM, BY, CH, MD, GE, RS, NO
Black stork *Ciconia nigra*			Belarus, Russian Federation Non-EU reporting countries: AM, BY, GE, RS, RU
Eurasian roller *Coracias garrulus*			Georgia Non-EU reporting countries: AM, BY, GE, MD, RS
Corncrake *Crex crex*			Belarus Non-EU reporting countries: AM, BY, CH, GE, MD, RS, NO

Figure 5. Proportions of ***bird species*** resources in terms of breeding pairs between EU (blue) and non-EU (green) countries. Source: Database of Resolution No. 8 (2012) and Art. 12 database. Minimum and maximum estimates reflect the values indicated in the databases submitted by the EU and non-EU countries.

Although the absence of reports from very large countries such as the Russian Federation and Ukraine is a recognised problem, this review shows that even some relatively "small" countries may play a significant role in conserving protected bird species in the existing stronghold locations, i.e. Norway in the case of golden eagle, Serbia for ferruginous duck, Belarus for corncrake and Georgia for Eurasian roller.

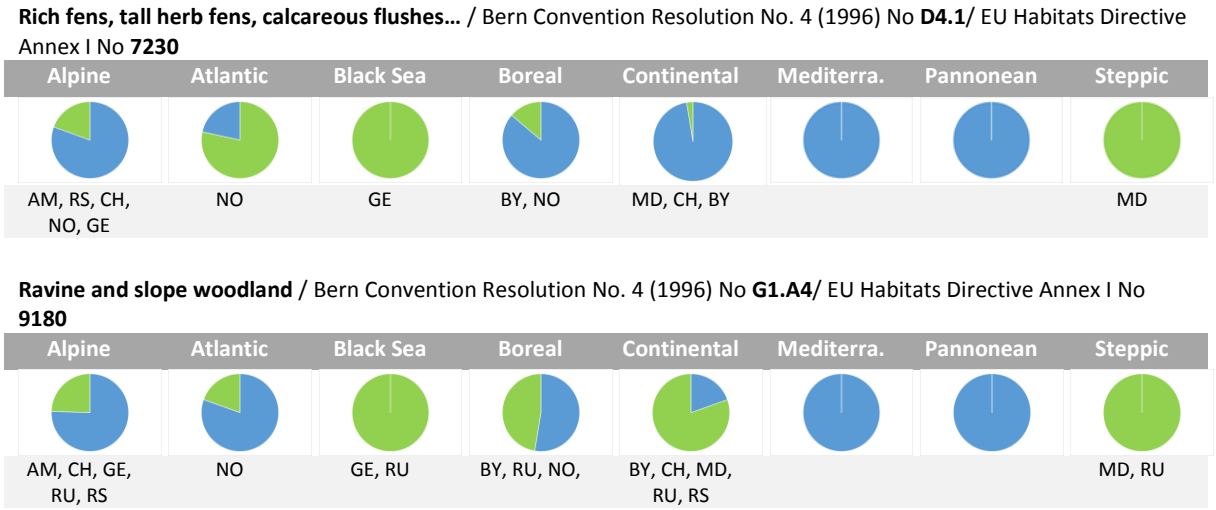


Figure 6. Proportions of areas of two ***habitat types*** in the EU (blue) and non-EU (green) countries by bio-geographical regions. The light grey area lists non-EU countries which reported on a particular habitat during 2019 trial phase. There should be a note that RO data are wrong for "rich fens" and this is for the Alpine and Continental biogeographical regions. If we correct this, the proportions would change dramatically. Anatolean region is excluded (not present in the EU, some habitats only in Armenia). Source: Database of Resolution No. 8 (2012) and Art. 12 database.

6. Comparison of the Resolution No. 4 (1996) habitats with the complete EUNIS habitat classification

The habitats listed under Resolution No. 4 (1996) and annex I of the Habitats Directive represent only a part of Europe's total biodiversity. It is generally accepted that the protection of those habitats together with the protection of the species of Resolution No. 6 (1998) and the species of the annexes of the Habitats and Birds Directives result in the identification of the so-called core areas of a wider concept of an ecological network, aiming at a coherent biodiversity conservation. On the other hand, the reporting under Resolution No. 8 (2012) and Article 17 and Article 12 under the Nature Directives is based on the total distribution (range) of the listed features including the parts outside the Emerald and Natura 2000 Networks, estimating their contribution to an integral biodiversity conservation strategy.

This statement leads to an interesting question of what percentage of the total biodiversity is actually listed in the annexes of the leading nature conservation instruments in Europe.

The draft report to be published in 2020 "State of Nature in the EU – Methodologies" has also a section where an estimate is made of how many habitats from the EUNIS habitat classification are actually listed in Annex I of the Habitats Directive. In parallel, this chapter is making a similar calculation but for the habitats listed in Resolution No. 4 (1996). If the EUNIS classification is considered to fully cover all biodiversity in Europe, this type of estimate can give a glimpse on how much of this biodiversity is under attention by the Nature Directives and the Bern Convention.

While the habitats listed in Annex I of the Habitats Directive have their own coding system, the Resolution No. 4 (1996) habitats are a direct subset of the complete EUNIS habitat classification system. Table 5 shows the number of habitats of the Annex I of the Habitats Directive and of Resolution No. 4 (1996) of the Bern with a relationship with EUNIS habitat classes at level 3. The figures for Annex I of the Habitats Directive are taken from the draft report "State of nature in the EU – Methodologies".

The comparison between Resolution No. 4 (1996) and the EUNIS habitat classification is easy and straightforward because EUNIS is the source classification for the Resolution. Only 3 types of relationship need to be considered:

= same

< narrower (the habitat listed in Resolution No. 4 (1996) is at a lower level than level 3, e.g. E1.71 where E1.7 is counted as having a relationship

> wider (the habitat listed in Resolution No. 4 (1996) is at a higher level than level 3, e.g. F7, all level 3 habitats below F7 are counted as having a relationship: F7.1, F7.2, F7.3 and F7.4

Table 5:

Numerical Coverage of habitats protected under the Habitats Directive and the Bern Convention Resolution No. 4 (1996) by EUNIS habitat categories

EUNIS Habitats	Total of EUNIS Level 3 habitats	Number of EUNIS Level 3 habitats related to HD Annex I	Number of EUNIS level 3 habitats not related to HD Annex I	Number of EUNIS level 3 habitats related to BC Res. 4	Number of EUNIS level 3 habitats not related to BC Res. 4
A Marine Habitats	56	41	15	32	24
B Coastal habitats	19	13	6	12	7
C Inland surface waters	21	12	9	13	8
D Mires, bogs and fens	15	10	5	10	5
E Grasslands and land dominated by forbs, mosses or lichens	42	20	22	23	19
F Heathland, scrub and tundra	41	18	23	18	23
G Woodland, forest and other wooded land	60	29	31	33	27
H Inland unvegetated or sparsely vegetated habitats	30	15	15	20	10
I Regularly or recently cultivated agricultural, horticultural and domestic habitats	8	0	8	0	8
J Constructed, industrial and other artificial habitats	34	0	34	0	34
X Habitat complexes	36	5	31	9	27
Total	**362**	**163**	**199**	**170**	**192**
Total_%		**45,03%**	**54,97%**	**46,96**	**53,04**
Without counting Marine	306	122	184	138	168
Total_%		**39,87**	**60,13**	**45,10**	**54,90**

Remarks for further thoughts:

- Resolution No. 4 (1996) lists 213 unique EUNIS habitat classes from different hierarchical levels in the classification, corresponding to 4% of the 5286 units for the whole classification. It would possibly be better to only calculate the % of the lowest hierarchical level which are covered by the listed levels (this issue needs further investigations)

- 77 level 3 habitats (out of 362 in total in the EUNIS habitat classification) are listed as such in the Resolution No. 4 (1996); 7 level 2 habitats are listed for which 43 level 3 habitats are counted; 112 lower levels are listed for which 40 level 3 habitats are counted; and 9 complex habitats are listed in

Resolution No. 4 (1996) and counted as such (actually level 2 habitats in the EUNIS classification).

- In general, one would expect a higher percentage for Resolution No. 4 (1996) because of the Pan-European geographical scope of the Bern Convention. When looking at the Total_% this is only slightly confirmed, emphasising the effect of the harmonisation efforts between Annex I of the Habitats Directive and Resolution No. 4 (1996) over the last years. Without counting the Marine habitats, the percentage is clearly higher, partly explained by the more recently added habitat classes typical for East and Central Europe. (E1.13, G3.43, X35, X36)

The Marine habitats clearly need further investigation. The Brexit negotiations for the transfer of Natura 2000 sites towards the Emerald Network also highlighted the need for harmonisation between the marine habitats of Resolution No. 4 (1996) and of Annex I. As a result from the negotiations, the Bern Convention Standing Committee meeting in 2019 adopted the proposal of the UK to add two marine habitats (A6.1 and A6.61) to facilitate the transfer from Natura 2000 to the Emerald Network for all marine sites. It was recognised that the marine component of the Resolution No. 4 (1996) need further attention in the future.

7. Presentation of the data reported under Resolution No. 8 (2012)

In this chapter we discuss possible ways for presenting key information on the conservation status of species and habitats across Europe and we also present the first results on a few selected features from the first reporting exercise. When looking at the possibilities, the ideas were primarily sought from the experience with the dissemination of information on EU's reporting under the Nature Directives.

Most comprehensive information on the outcomes of the EU Habitats Directive (Article 17) and the Birds Directive (Article 12) reporting processes are available from the Eionet portal's Article 17 (https://nature-art17.eionet.europa.eu/article17/) and Article 12 (https://nature-art12.eionet.europa.eu/article12) web-tools. A recent presentation by the ETC/BD at the "Expert group on Reporting under the Nature Directives" on 26 March 2020, informed that no substantial changes are planned in these tools at least in the near future. Nevertheless, the Article 12 tool will now also have information on species trends.

Figure 7 below represents the web tool for browsing the Art. 17 data for species assessments at EU biogeographical level. To summarise, this tool contains four main elements:

1. Searchable database by reporting period, taxonomic group, feature, country, bio-geographical region where the output includes the key elements determining the conservation status: range, population (in case of species), typical habitat, future prospects, overall assessment and distribution. [Results available as auto-generated table]
2. Species (and habitat) datasheets with the basic information on distribution and ecology [information available as a free text].
3. Audit trail (to be used for stakeholder's comments during the consultation process). For example, public consultation of draft Art. 17 EU-level assessments in 2020 provided 162 comments.
4. Distribution of the species or habitat. The distribution is shown on the map with actual distribution grids marked in a colour reflecting the conservation status (red, amber, green, grey) in the bio-geographical region

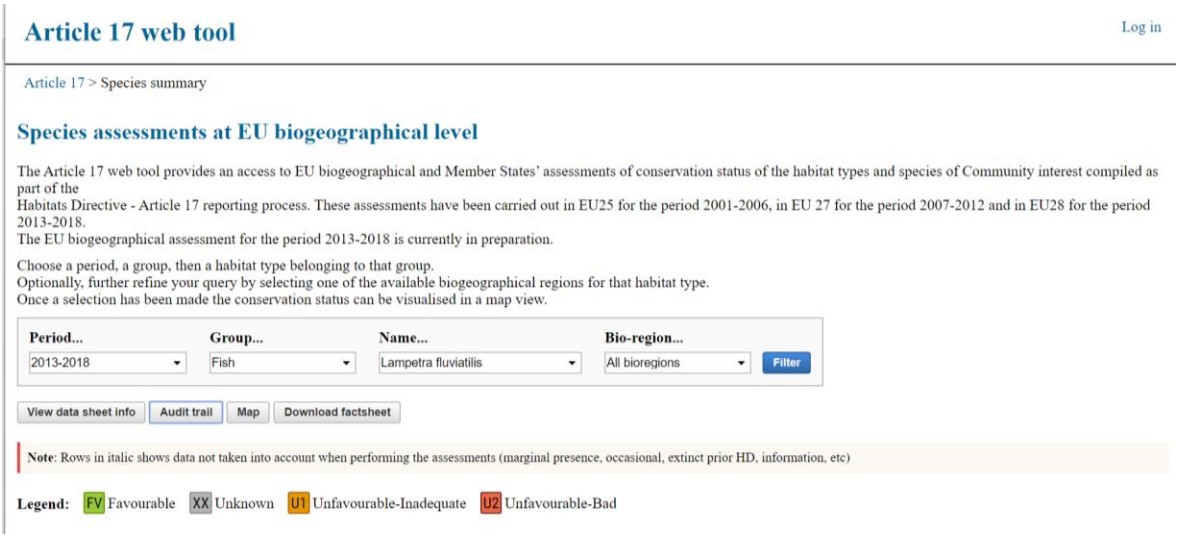


Figure 7. Screenshot from the front page of the Art. 17 web-tool for species at EU biogeographical level.

Looking forward how data collected within the reporting under Resolution No. 8 (2012) could be presented in future, we consider the Art.17 and Art. 12 web-tools as a very thorough and efficient way for displaying data. Still it is also known that a lot of resources are needed to reach such level of data presentation, which includes technical development of web-tools, data collection and processing. The EU assessment of Art. 17 in 2019/2020 was undertaken by the ETC/BD and EEA and it required 3.5 months of work with 33 experts involved from 7 organisations across EU (source: ETC/BD presentation "Expert group on Reporting under the Nature Directives").

Given the limited financial capacities of the Bern Convention Secretariat, it would be worthwhile to discuss with the European Environment Agency the possibility to integrate data collected within Resolution No. 8 (2012) into a common Pan-European database and to present information related to data from Resolution No. 8 (2012) together with Art. 17 and Art. 12 data in the future. Otherwise significant investments would be necessary to develop a dedicated web-portal and constitute own groups of experts and knowledge base.

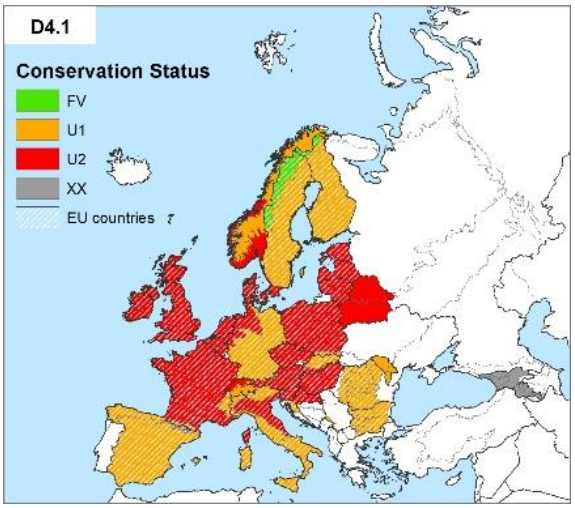
One of the aims of this report is to demonstrate the **value of presenting data from non-EU countries together with EU data**. Given the very limited resources available for this report we have collated spatial information for two habitats and six non-avian species from different taxonomic groups with the most comprehensive coverage from the non-EU part of Europe (Figure 8). The conservation status of birds is not part of the reporting obligations for each country, but similar maps as for non-avian species were created using long-term trend data (Figure 9).

It should be noted that this information is based on the (raw) data as recorded in the databases submitted by Parties, as there was no room for a systematic QA/QC procedure. **Automated QA/QC procedures**, which are in operation as part of Art. 17 and Art. 12 reporting processes, is another element of work that needs to be introduced in the reporting under Resolution No. 8 (2012) as manual QA/QC would require a lot of expert man-days and may result in diverging approaches. The contents of QA/QC for the reporting under Resolution No. 8 (2012) may be developed on the basis of existing QA/QC procedures in the EU. The timeline for the analysis of the reported data should also foresee time when possible incompleteness and errors are communicated back to countries and they are given time to do appropriate amendments and corrections (which was not the case in the current reporting trial).

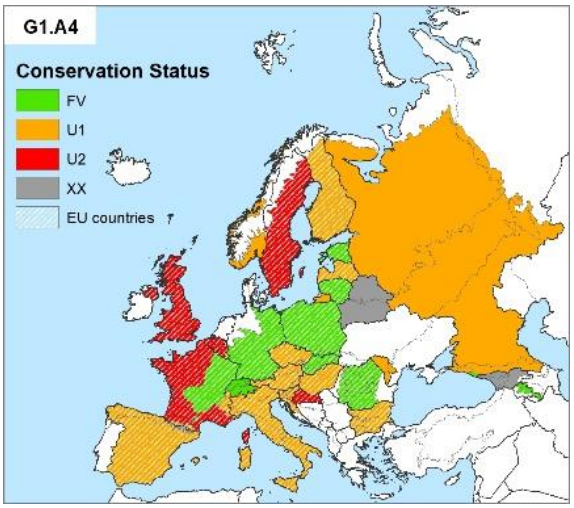
Figures 8 and 9 provide a few potentially interesting observations and also problems which should be taken into account in a more thorough data analysis:

- Common maps may demonstrate distinctively different conservation status, or long-term trends in birds, in different regions of Europe (e.g. the dragonfly *Leucorrhinia pectoralis* where the conservation status in the Baltics and Scandinavia is FV and in most other parts is U1 or U2, unfortunately the conservation status is unknown in Belarus, Serbia and Georgia and is not reported by the Russian Federation and Ukraine)

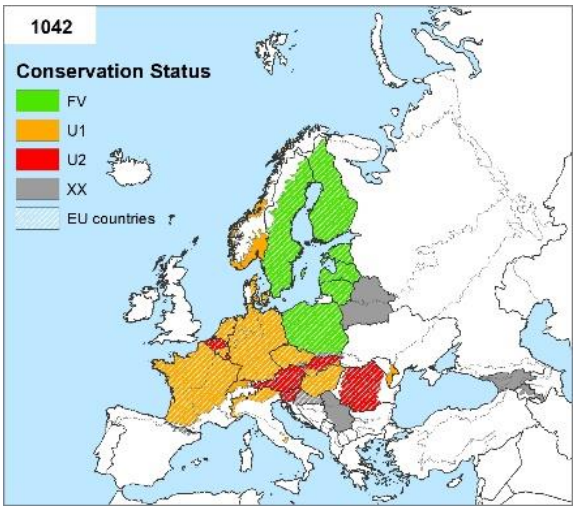
- More detailed analyses may focus on specific bio-geographical regions and species characteristic to those regions. Status and distribution can be combined also with resources (population sizes for species and areas of habitats) in each country/region (see Chapter 5).
- Unfortunately, some important non-EU countries have either not submitted any data (e.g. Ukraine) or very partial data on few features (e.g. Russian Federation). This makes any conclusions difficult at a broad Pan-European level.
- Many assessments in non-EU countries are unknown. Some of the maps produced are not very informative, even if the feature is reported in the database. It is also not clear if the "unknown" assessments ("greys") indicate marginal (not numerous, or near extinct) populations, sensitive species (e.g. wolf in Norway) or actual lack of information.



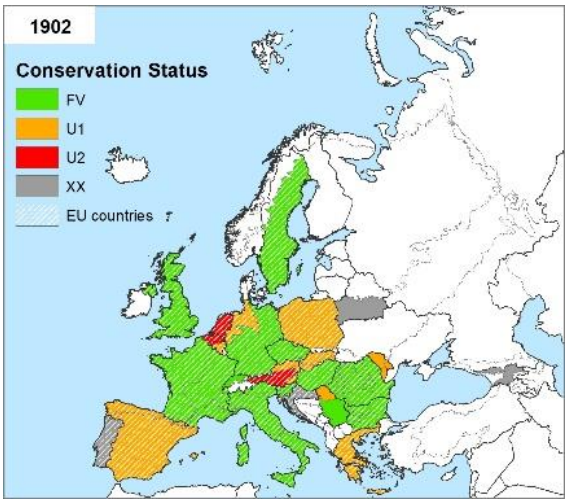
D4.1 (7230) Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks



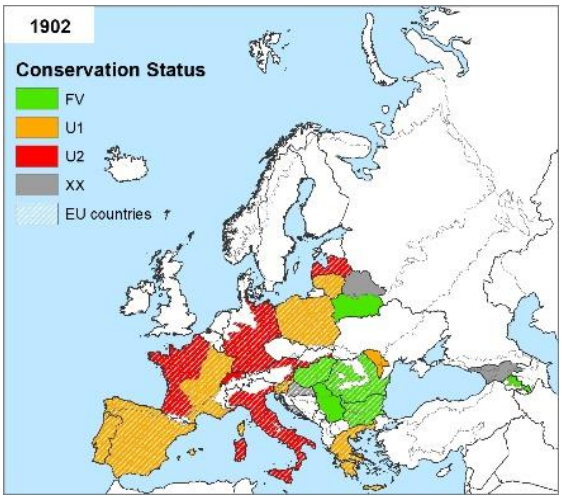
G1.A4 (9180) Ravine and slope woodland



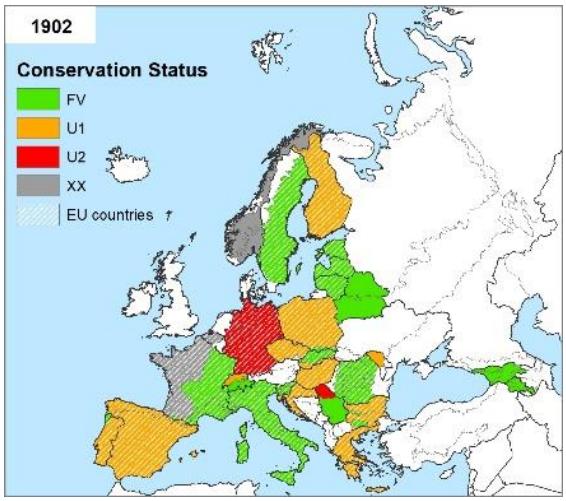
1042 Leucorhinia pectoralis



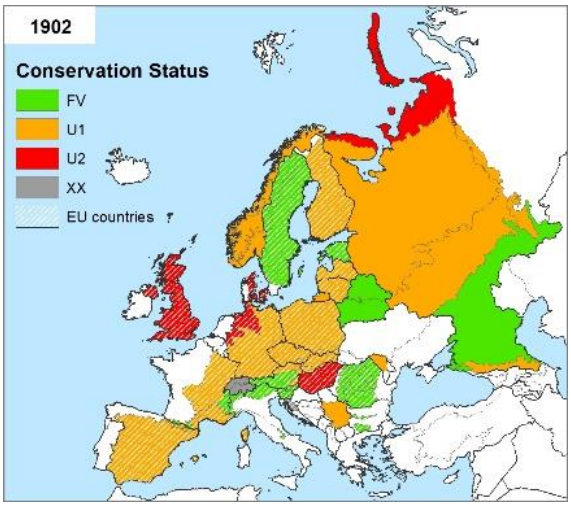
1083 Lucanus cervus



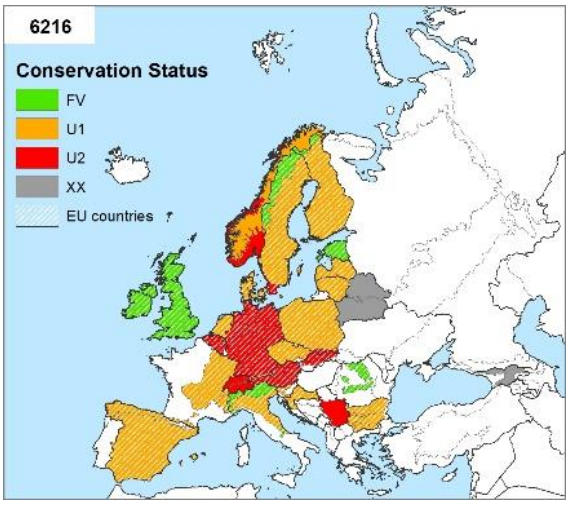
1220 Emys orbicularis



1352 Canis lupus



1902 Cypripedium calceolus



6216 Hamatocaulis vernicosus

Figure 8. Conservation status of eight features in the EU countries (Art. 17 data 2013-2018) and non-EU countries (Resolution No. 8 (2012) data 2019). Data are presented by country and by bio-geographical region.

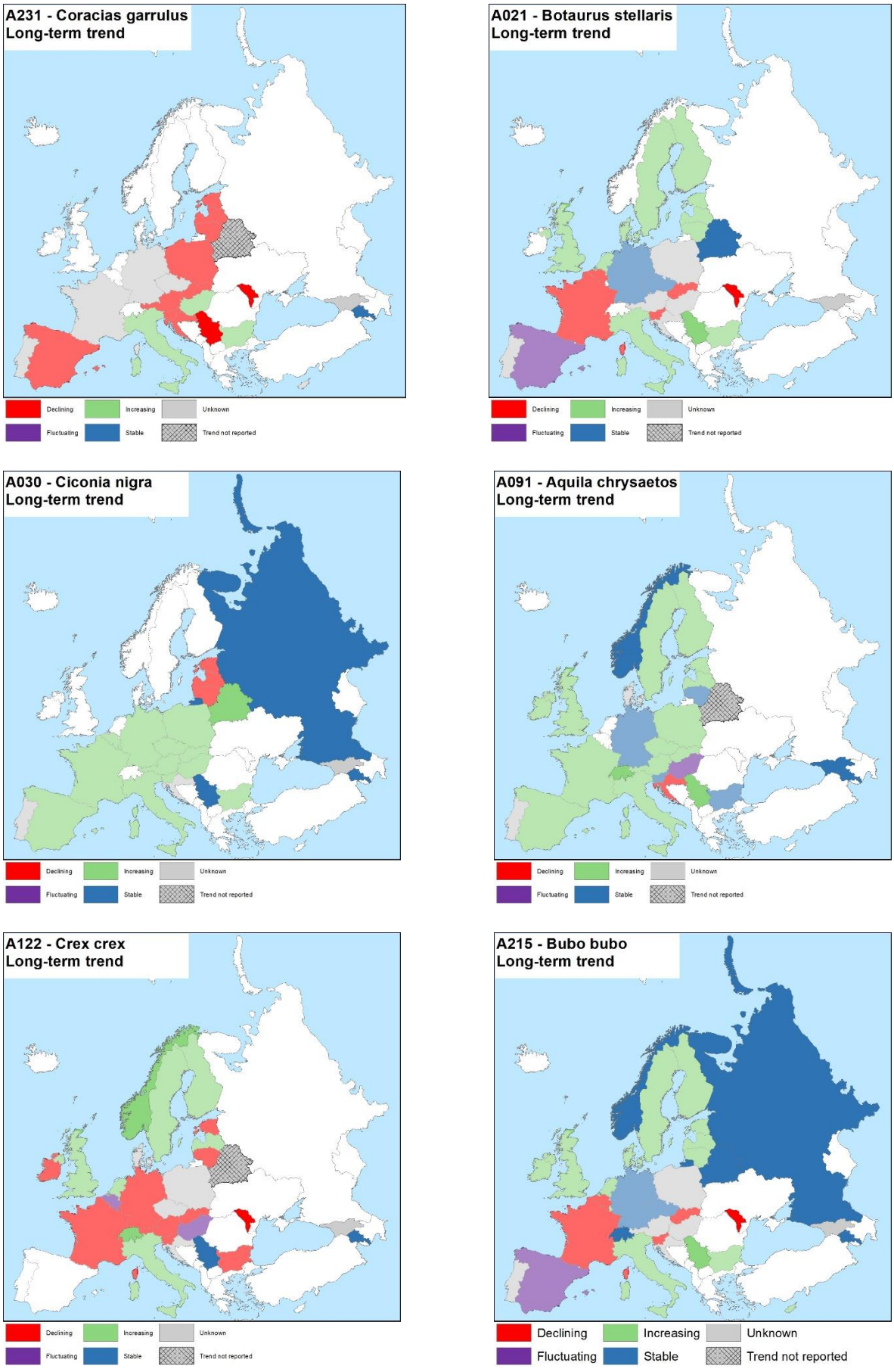


Figure 9. Long-term trends of six bird species in the EU and non-EU countries. Colours of EU countries are paler than of non-EU countries.

8. Analysis of the Pressures and Threats data

Altogether, 8 countries reported 433 threats and pressures for12 bird species, 1817 threats and pressures for 25 non-avian species and 9 habitat types. Figure 10 presents the proportions of reported threats and pressures, the intensity (high or medium) and whether the effect occurred in the reporting country, or elsewhere (the latter information was collected only for birds).

There were no any significant difference between the EU and non-EU countries, as well as between bird species and habitats and non-avian species. The only difference was detected in birds where proportionally more non-EU countries considered that acting threats or pressures took place outside their countries

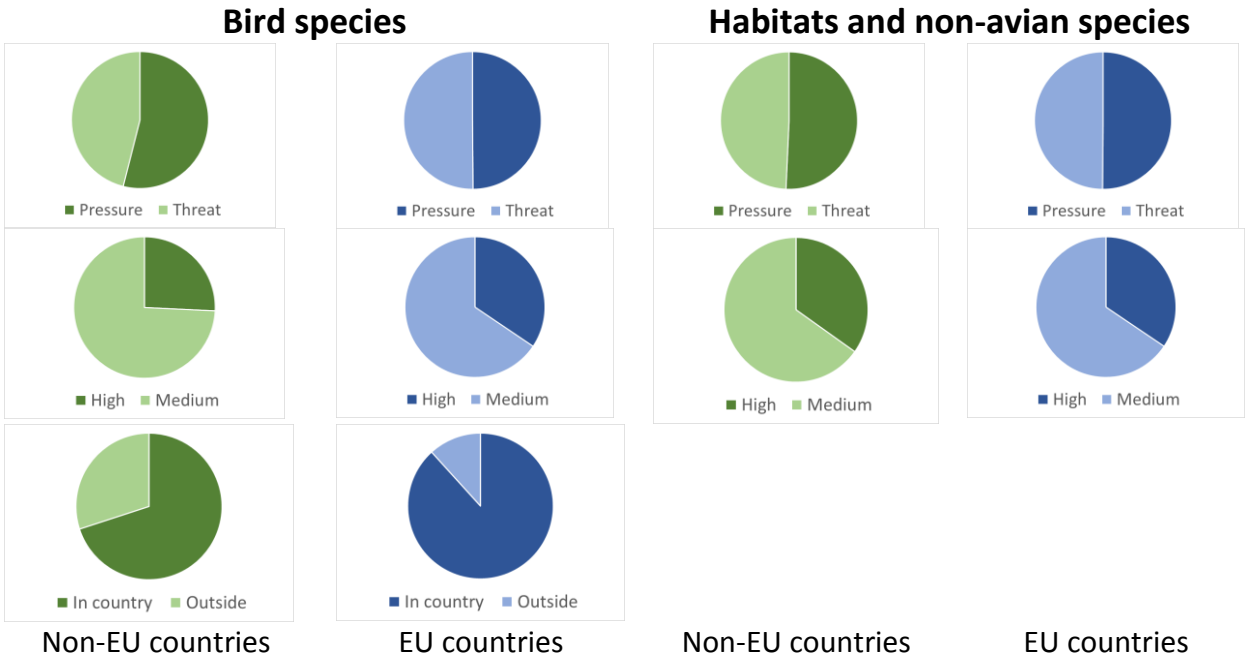


Figure 10. General characteristics of reported threats and pressures in the EU and non-EU countries.

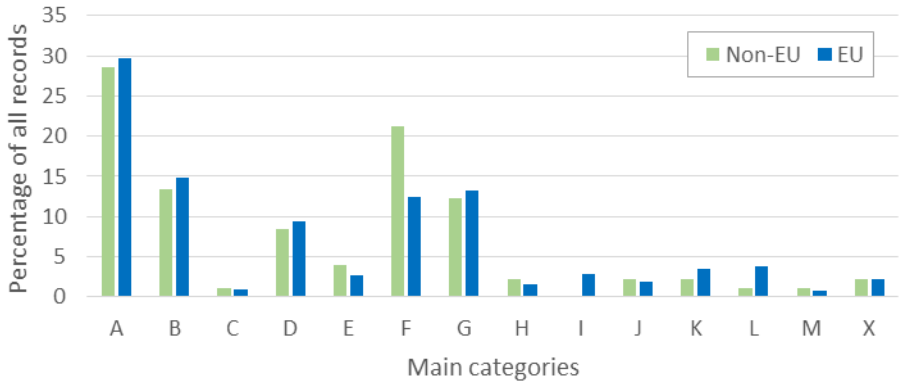
At the stage of data exploration, together with provisions in the reporting format, it was realised that there are multiple issues that make the use of reported pressure and threat information through the reporting process under Resolution No. 8 (2012) problematic.

According to the reporting format, reporting of 'Low' importance/impact pressure and threats were not requested. Thus, for example, a pressure or threat considered to be of ‘Low' impact/importance (not directly 'defined' in the reporting guidelines) but which was represented in all 8 non-EU parties that submitted reports under Resolution No. 8 (2012) and thus collectively be of significance, would not appear in the dataset, whereas just one pressure or threat reported as 'Medium' by a single country would.

Another problem could be the potential for some “pseudo-replication” caused by the option of reporting pressures and threats also outside the country in question (see also Figure 10 above). For example, if 7 countries all reported a pressure/threat occurring in the 8th country, this would result in 7 instances of the single pressure or threat.

Eventually the upper limits of five 'High' and ten 'Medium' and 'High' pressures and threats allowed by the reporting under Resolution No. 8 (2012), as taken over from the Art. 17 reporting format, are rather artificial and for these situations recording the additional pressures or threats would be necessary.

A: Threats



B: Pressures

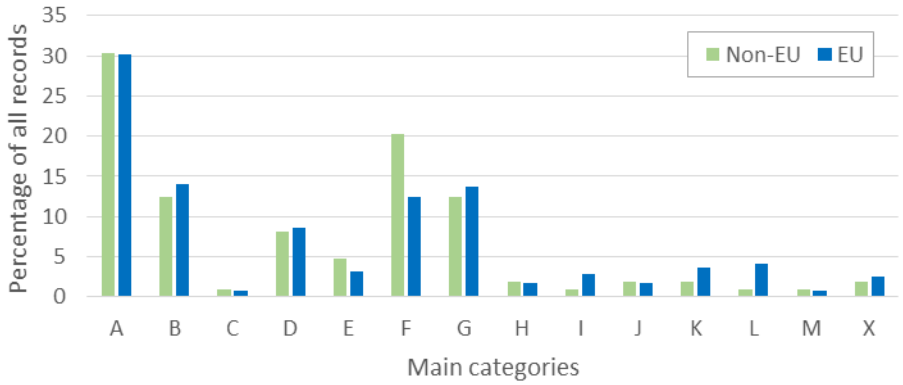


Figure 11. Proportions of reported threats (A) and pressures (B) for bird species by the main categories in the EU and non-EU countries. Threat and pressure categories correspond to the categories in the reference portals of the reportings under Resolution No. 8 (2012), Art. 17 and Art. 12. A: agriculture, B: sylviculture, forestry, C: mining, extraction of materials and energy production, D: transportation and service corridors, E: urbanisation, residential and commercial development, F: biological resource use other than agriculture and forestry, G: human intrusions and disturbances, H: pollution, I: invasive, other problematic species and genes, J: natural system modifications, K: natural biotic and abiotic processes, L: geological events, natural catastrophes, M: climate change, X: no threats or pressures.

Despite the described problems, the pressure and threat dataset remains a valuable source of information on the drivers of change for species and habitats at Pan-European level. In this study it was attempted at least to look at the frequencies each pressure and threat group has been reported, and if there are any differences in these frequencies between EU and non-EU countries. Figure 11 provides such information about birds and Figure 12 about habitats and non-avian species.

Regarding to bird species, almost all main categories were reported at similar frequencies, with exception of the "F" group which includes also fishing and hunting, including also illegal activities. Could it be interpreted that this is a result of stronger and more successful policies with respect to hunting and fishing within the EU?

Regarding non-avian species and habitats, there were more differences between EU and non-EU countries, in addition to hunting and fishing. Non-EU countries reported more often mining and extraction, transport and human intrusions and disturnbances. EU countries reported more often effects of agriculture, forestry, invasive

species and geological events and natural catastrophes. No doubt this dataset merits deeper analyses on how to interpret these findings. Yet also for the next reporting round the indicated problems should be discussed (including those related to the reporting format) so that the pressure and threat databaset could be used without worries about possible biases.

Unfortunately, it was not possible to perform detailed comparisons at the level of individual species or habitats. This was because five or more non-EU countries have reported pressures and threats only for a few features. The sample size for non-EU countries was very small and it was difficult to compare with EU countries (often >20 countries reported the feature) which have reported pressures and threats for all species and habitats more systematically.

A: Threats

B: Pressures

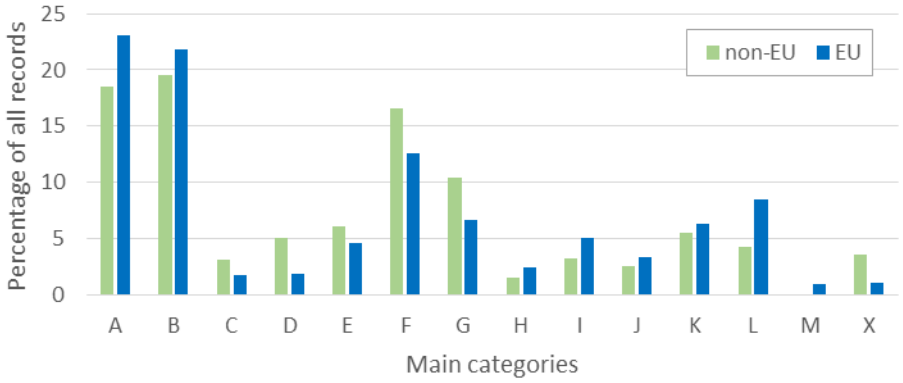


Figure 12. Proportions of reported threats (A) and pressures (B) for habitats and non-avian species by the main categories in the EU and non-EU countries. Threat and pressure categories as in Figure 11.

9. Conclusions and recommendations

This chapter summarises the main findings of this study and presents the most important conclusions. Also a number of recommendations are presented with a view to the next reporting round 2019-2024**:**

9.1 Conclusions from the present reporting data deliveries

- Eight countries, out of approximately 15 possible countries, submitted data according to the reporting format of the Resolution No. 8 (2012), using the dedicated delivery folders on the Common Data Repository (CDR) of the EEA.
- The deliveries included tabular and spatial data. In some cases, spatial data were incomplete compared with the tabular data. Norway did not supply any spatial data.
- For the non-EU Contracting Parties, the delivery on the CDR for this reporting round is rather a "static" process. Automated reply procedures on QA/QC, as is the case for EU countries, is not operational for the data deliveries within Resolution No. 8 (2012) and there was no option for a second delivery. As a consequence, considerable time was spent in January 2020 to manually verify the deliveries. This manual checking procedure only included basic technical verifications of the correctness of the formats and completeness of the number of files to be delivered for tabular data and the number of layers for the spatial data.
- Thanks to the intensive harmonisation and standardisation between the Resolution No. 8 (2012) and the Art. 17 and Art.12 data, it was fairly easy to merge tabular data collected within Resolution No. 8 (2012) with the EU data to become a Pan-European data set on conservation status for the Bern Convention subset of features. Both databases do have the same structure, database files and field names.
- All countries were expected to report on the features (species and habitats) according to the agreed checklist on presence/absence in each country and biogeographical region or population season for birds. As this is the first time such checklist was produced, some countries have indicated the needs for clarifications or amendments. Unfortunately, there was no process for handling these needs during the present reporting round. (see corresponding recommendation in 9.2, bullet point 2)
- In most countries, one or more feature reports are missing in the data delivery. We can only guess the reasons for not reporting, such as lack of data, resources, staff, time etc. On the other hand, countries may have selected those features which are "charismatic" or for which data were most at hand. Asking countries for more details on this issue could be part of a survey among the countries (see suggested action in chapter 9.2).
- For the 8 countries and according to the agreed checklist of features, overall, 71% of the reports have data in the database. Vice versa, for 29% of the defined reports in the checklist, no data have been supplied.
- The checklist for the Russian Federation contains a number of exceptions for which no report is expected despite the feature is present in the country and biogeographical region. Being the largest country with the highest number of bio-geographical regions and features present, the Group of Experts agreed to limit the number of features to more or less balance the maximum number of reports for each country. Nevertheless, the number of expected reports is still the highest for the Russian Federation. It is appreciated that at least some reports have been delivered and this highlights the importance of the contribution of the Russian Federation to the conservation status assessments at Pan-European level.
- Although the training workshops in 2018 and 2019 explained the principles of gathering the spatial data for the distribution maps, the results show a variety of problems. For some features tabular data are delivered but without associated spatial data layer.
- The analysis of the fully merged set, which includes both non-EU and EU data, provides at least a pan-European vision on the conservation status. The examples show that non-EU countries possibly host large proportions of the whole European resource for several if not many species and habitats.
- Yet the common presentation of data could have even greater value if more countries would have reported data and for those countries which did report would have less "unknown" assessments.
- Probably also due to the fact that this is the first reporting exercise, the quality of the conservation status assessments is very variable among non-EU countries, but in general the quality is lower than the EU average. In some instances the self-assessments of quality in the databases does not seem reliable.

9.2 Recommendations for future work

From the above it is possible to suggest the following actions and recommendations:

- The reporting for the 2013-2018 period is based on an agreed preselection of 46 features. The next reporting period will cover the period 2019-2024, with a data delivery somewhen in 2025. The coming few years should be used to evaluate the present reporting round and to negotiate further development concerning the number of features to be covered in the next period. It should be expected to report on all species and habitats with the view of assessing the conservation status of all features concerned and to publish a Pan-European State of Nature Report together with the EU as a Contracting Party to the Convention
- The geographical unit forming the basis for reporting is the biogeographical region for non-avian species and habitats and the country for birds. The presence of the features within each of the geographical units, is agreed and summarised in the so-called "Checklist". For the period 2013-2018 the creation of the list was entirely based on the Reference Lists resulting from the biogeographical evaluation seminars under the development of the Emerald Network. This biogeographical process is not yet fully finished and changes to the Reference List and subsequently the Checklist, can still occur. Moreover, the existing Checklist for Resolution No. 8 (2012) does not include countries who have not yet delivered any data under the Emerald Network. Nevertheless, these countries have an equal responsibility towards Resolution No. 8 (2012). During the preparation for the next reporting round the Checklist should be finalised for ALL possible countries reporting under Resolution No. 8 (2012).
- For the present reporting round, only species from Resolution No. 6 (1998) were selected. For the reporting under Art. 17 and Art. 12, other species are included in the checklists, such as species from Annex IV and V of the habitats Directive. Moreover, also some related reporting fields were not included in the reporting format of Resolution No. 8 (2012), such as information on huntable species. In the light of the possible revision of the reporting format, it should be evaluated if such additional species reports and data fields should be included in the new reporting round to enhance the compatibility between the reporting exercises in Europe.
- Five countries have given the requested extra information on the so-called typical species for the habitats. Norway and Belarus did not include this type of information. To identify the typical species to be used in the subsequent reporting rounds to assess the conservation status of the habitat is entirely under the responsibility of countries. This report does not include any evaluation of the lists given. It is suggested to identify a separate task in the preparation of the next reporting round to evaluate the lists of typical species identified by each of the reporting countries leading to possible suggestions for harmonisation and advice to countries.
- Assessing the conservation status and scientific evaluation of the delivered data is in high demand of external expertise which is presently very limited for the Resolution No. 8 (2012). It is suggested to explore possibilities of collaboration with other institutions such as the European Environment Agency and its Topic Centre on Biological Diversity, and BirdLife International with a view to broaden the international expertise. This collaboration should also lead to harmonised procedures for analysis and presentation of results, such as common data formats with a view to possible use in the same presentation environments (web-tools).
- It's quite likely, the reporting formats for Art.17, Art. 12 and Resolution No. 8 (2012) will be reviewed for the next reporting cycle. It would be best if this reviewing aims to a common goal. Potential changes to the formats, data collection and delivery tools, including QA/QC procedures, should be mutually beneficial.
- For the reporting under Resolution No. 8 (2012), it was decided to operate at the level of the species' scientific names as published in Resolution No. 6 (1998). No taxonomic evolution or revision has been taken into account as was the case for the EU reporting. In the future, more systematic attention should be given to taxonomic changes to the scientific names as listed in the appendices and resolutions of the Convention.
- In the future, in the framework of the meetings of the Group of Experts, a questionnaire to parties who submitted databases could be developed to identify difficulties encountered and the needs for further assistance. In the same way, it could be worthwhile to ask countries about their needs and ideas.
- Hopefully this test reporting round showed that the reporting is a major exercise in every country and requires timely resource mobilisation towards the planned submission deadlines. It is also important to

analyse and anticipate any problems some time ahead, so it is possible to address them to a maximum extent. In practice, the preparations for 2019-2024 reporting should start "now".

Appendix 1: Detailed table of delivered and missing reports for non-avian species according to the initially agreed checklist per biogeographical region

(0 = Not delivered, 1 = delivered)

Species code	Species name	country	region	Delivery Status
1014	Vertigo angustior	AM	ALP	1
1014	Vertigo angustior	BY	BOR	1
1014	Vertigo angustior	BY	CON	1
1014	Vertigo angustior	CH	CON	1
1014	Vertigo angustior	GE	ALP	1
1014	Vertigo angustior	GE	BLS	1
1014	Vertigo angustior	MD	CON	1
1014	Vertigo angustior	NO	ATL	1
1014	Vertigo angustior	NO	BOR	1
1014	Vertigo angustior	RS	ALP	0
1014	Vertigo angustior	RS	CON	0
1014	Vertigo angustior	RS	PAN	0
1014	Vertigo angustior	RU	ALP	1
1014	Vertigo angustior	RU	BOR	1
1014	Vertigo angustior	RU	CON	1
1032	Unio crassus	BY	BOR	1
1032	Unio crassus	BY	CON	1
1032	Unio crassus	MD	CON	1
1032	Unio crassus	RS	ALP	0
1032	Unio crassus	RS	CON	1
1032	Unio crassus	RS	PAN	1
1032	Unio crassus	RU	BOR	0
1032	Unio crassus	RU	CON	0
1032	Unio crassus	RU	STE	0
1042	Leucorrhinia pectoralis	AM	ALP	1
1042	Leucorrhinia pectoralis	BY	BOR	1
1042	Leucorrhinia pectoralis	BY	CON	1
1042	Leucorrhinia pectoralis	CH	CON	1
1042	Leucorrhinia pectoralis	GE	ALP	1
1042	Leucorrhinia pectoralis	GE	BLS	1
1042	Leucorrhinia pectoralis	GE	STE	1
1042	Leucorrhinia pectoralis	MD	STE	1
1042	Leucorrhinia pectoralis	NO	ATL	1
1042	Leucorrhinia pectoralis	NO	BOR	1
1042	Leucorrhinia pectoralis	RS	ALP	0
1042	Leucorrhinia pectoralis	RS	CON	1
1042	Leucorrhinia pectoralis	RS	PAN	1
1042	Leucorrhinia pectoralis	RU	ALP	0
1042	Leucorrhinia pectoralis	RU	BOR	0
1042	Leucorrhinia pectoralis	RU	CON	0
1042	Leucorrhinia pectoralis	RU	STE	0
1060	Lycaena dispar	AM	ALP	0
1060	Lycaena dispar	AM	ANA	0

Species code	Species name	country	region	Delivery Status
1060	Lycaena dispar	BY	BOR	1
1060	Lycaena dispar	BY	CON	1
1060	Lycaena dispar	CH	CON	1
1060	Lycaena dispar	GE	ALP	1
1060	Lycaena dispar	GE	BLS	1
1060	Lycaena dispar	GE	STE	1
1060	Lycaena dispar	MD	CON	1
1060	Lycaena dispar	MD	STE	0
1060	Lycaena dispar	RS	ALP	1
1060	Lycaena dispar	RS	CON	1
1060	Lycaena dispar	RS	PAN	1
1060	Lycaena dispar	RU	ALP	0
1060	Lycaena dispar	RU	BLS	0
1060	Lycaena dispar	RU	BOR	0
1060	Lycaena dispar	RU	CON	0
1060	Lycaena dispar	RU	STE	0
1083	Lucanus cervus	BY	CON	1
1083	Lucanus cervus	CH	CON	1
1083	Lucanus cervus	GE	ALP	1
1083	Lucanus cervus	MD	CON	1
1083	Lucanus cervus	MD	STE	1
1083	Lucanus cervus	NO	BOR	0
1083	Lucanus cervus	RS	ALP	1
1083	Lucanus cervus	RS	CON	1
1083	Lucanus cervus	RS	PAN	1
1083	Lucanus cervus	RU	ALP	0
1083	Lucanus cervus	RU	BLS	0
1083	Lucanus cervus	RU	BOR	0
1083	Lucanus cervus	RU	CON	0
1083	Lucanus cervus	RU	STE	0
1084	Osmoderma eremita	BY	BOR	1
1084	Osmoderma eremita	BY	CON	1
1084	Osmoderma eremita	MD	CON	1
1084	Osmoderma eremita	MD	STE	1
1084	Osmoderma eremita	NO	BOR	1
1084	Osmoderma eremita	RS	ALP	1
1084	Osmoderma eremita	RS	CON	1
1084	Osmoderma eremita	RS	PAN	0
1084	Osmoderma eremita	RU	ALP	0
1084	Osmoderma eremita	RU	BOR	0
1084	Osmoderma eremita	RU	CON	0
1084	Osmoderma eremita	RU	STE	0
1096	Lampetra planeri	BY	BOR	1
1096	Lampetra planeri	BY	CON	1
1096	Lampetra planeri	CH	ALP	1
1096	Lampetra planeri	CH	CON	1
1096	Lampetra planeri	NO	ATL	1
1096	Lampetra planeri	NO	BOR	1
1096	Lampetra planeri	RU	BOR	0
1096	Lampetra planeri	RU	CON	0

Species code	Species name	country	region	Delivery Status
1134	Rhodeus sericeus amarus	AM	ANA	1
1134	Rhodeus sericeus amarus	BY	BOR	1
1134	Rhodeus sericeus amarus	BY	CON	1
1134	Rhodeus sericeus amarus	CH	ALP	0
1134	Rhodeus sericeus amarus	CH	CON	1
1134	Rhodeus sericeus amarus	GE	BLS	1
1134	Rhodeus sericeus amarus	MD	CON	1
1134	Rhodeus sericeus amarus	MD	STE	1
1134	Rhodeus sericeus amarus	RS	CON	1
1134	Rhodeus sericeus amarus	RS	PAN	1
1134	Rhodeus sericeus amarus	RU	BLS	0
1134	Rhodeus sericeus amarus	RU	BOR	0
1134	Rhodeus sericeus amarus	RU	CON	0
1134	Rhodeus sericeus amarus	RU	STE	0
1146	Sabanejewia aurata	AM	ALP	1
1146	Sabanejewia aurata	AM	ANA	1
1146	Sabanejewia aurata	BY	CON	1
1146	Sabanejewia aurata	GE	ALP	1
1146	Sabanejewia aurata	GE	STE	1
1146	Sabanejewia aurata	MD	CON	1
1146	Sabanejewia aurata	MD	STE	1
1146	Sabanejewia aurata	RS	ALP	1
1146	Sabanejewia aurata	RS	CON	1
1146	Sabanejewia aurata	RS	PAN	0
1146	Sabanejewia aurata	RU	ALP	0
1146	Sabanejewia aurata	RU	CON	0
1146	Sabanejewia aurata	RU	STE	0
1163	Cottus gobio	BY	BOR	1
1163	Cottus gobio	BY	CON	1
1163	Cottus gobio	CH	ALP	1
1163	Cottus gobio	CH	CON	1
1163	Cottus gobio	MD	CON	1
1163	Cottus gobio	NO	ALP	1
1163	Cottus gobio	NO	BOR	1
1163	Cottus gobio	RS	ALP	1
1163	Cottus gobio	RS	CON	1
1163	Cottus gobio	RS	PAN	0
1163	Cottus gobio	RU	ALP	0
1163	Cottus gobio	RU	ARC	0
1163	Cottus gobio	RU	BOR	0
1163	Cottus gobio	RU	CON	0
1163	Cottus gobio	RU	STE	0
1193	Bombina variegata	CH	ALP	1
1193	Bombina variegata	CH	CON	1
1193	Bombina variegata	MD	CON	1
1193	Bombina variegata	RS	ALP	1
1193	Bombina variegata	RS	CON	1
1193	Bombina variegata	RS	PAN	1
1220	Emys orbicularis	AM	ALP	1
1220	Emys orbicularis	BY	BOR	1

Species code	Species name	country	region	Delivery Status
1220	Emys orbicularis	BY	CON	1
1220	Emys orbicularis	CH	CON	1
1220	Emys orbicularis	GE	ALP	1
1220	Emys orbicularis	GE	BLS	1
1220	Emys orbicularis	GE	STE	1
1220	Emys orbicularis	MD	CON	1
1220	Emys orbicularis	MD	STE	1
1220	Emys orbicularis	RS	ALP	0
1220	Emys orbicularis	RS	CON	1
1220	Emys orbicularis	RS	PAN	1
1220	Emys orbicularis	RU	ALP	0
1220	Emys orbicularis	RU	BLS	0
1220	Emys orbicularis	RU	BOR	0
1220	Emys orbicularis	RU	CON	0
1220	Emys orbicularis	RU	STE	0
1308	Barbastella barbastellus	AM	ALP	0
1308	Barbastella barbastellus	BY	BOR	1
1308	Barbastella barbastellus	BY	CON	1
1308	Barbastella barbastellus	CH	ALP	1
1308	Barbastella barbastellus	GE	ALP	1
1308	Barbastella barbastellus	GE	BLS	1
1308	Barbastella barbastellus	GE	STE	1
1308	Barbastella barbastellus	MD	CON	1
1308	Barbastella barbastellus	MD	STE	0
1308	Barbastella barbastellus	RS	CON	1
1308	Barbastella barbastellus	RS	PAN	1
1308	Barbastella barbastellus	RU	ALP	0
1308	Barbastella barbastellus	RU	BLS	0
1308	Barbastella barbastellus	RU	STE	0
1352	Canis lupus	AM	ALP	1
1352	Canis lupus	AM	ANA	1
1352	Canis lupus	BY	BOR	1
1352	Canis lupus	BY	CON	1
1352	Canis lupus	CH	ALP	1
1352	Canis lupus	CH	CON	1
1352	Canis lupus	GE	ALP	1
1352	Canis lupus	GE	BLS	1
1352	Canis lupus	GE	STE	1
1352	Canis lupus	MD	CON	1
1352	Canis lupus	NO	ALP	1
1352	Canis lupus	NO	ARC	0
1352	Canis lupus	NO	ATL	0
1352	Canis lupus	NO	BOR	1
1352	Canis lupus	RS	ALP	1
1352	Canis lupus	RS	CON	1
1352	Canis lupus	RS	PAN	1
1352	Canis lupus	RU	ALP	0
1352	Canis lupus	RU	ARC	0
1352	Canis lupus	RU	BLS	0
1352	Canis lupus	RU	BOR	0

Species code	Species name	country	region	Delivery Status
1352	Canis lupus	RU	CON	0
1352	Canis lupus	RU	STE	0
1354	Ursus arctos	AM	ALP	1
1354	Ursus arctos	AM	ANA	1
1354	Ursus arctos	BY	BOR	1
1354	Ursus arctos	BY	CON	1
1354	Ursus arctos	GE	ALP	1
1354	Ursus arctos	GE	BLS	1
1354	Ursus arctos	GE	STE	1
1354	Ursus arctos	NO	ALP	1
1354	Ursus arctos	NO	ARC	0
1354	Ursus arctos	NO	ATL	0
1354	Ursus arctos	NO	BOR	1
1354	Ursus arctos	RS	ALP	1
1354	Ursus arctos	RS	CON	1
1354	Ursus arctos	RU	ALP	0
1354	Ursus arctos	RU	ARC	0
1354	Ursus arctos	RU	BLS	0
1354	Ursus arctos	RU	BOR	0
1354	Ursus arctos	RU	CON	0
1354	Ursus arctos	RU	STE	0
1355	Lutra lutra	AM	ALP	1
1355	Lutra lutra	AM	ANA	1
1355	Lutra lutra	BY	BOR	1
1355	Lutra lutra	BY	CON	1
1355	Lutra lutra	GE	ALP	1
1355	Lutra lutra	GE	BLS	1
1355	Lutra lutra	GE	STE	1
1355	Lutra lutra	MD	CON	1
1355	Lutra lutra	MD	STE	1
1355	Lutra lutra	NO	ALP	1
1355	Lutra lutra	NO	ARC	1
1355	Lutra lutra	NO	ATL	1
1355	Lutra lutra	NO	BOR	1
1355	Lutra lutra	RS	ALP	0
1355	Lutra lutra	RS	CON	1
1355	Lutra lutra	RS	PAN	1
1355	Lutra lutra	RU	ALP	0
1355	Lutra lutra	RU	ARC	0
1355	Lutra lutra	RU	BLS	0
1355	Lutra lutra	RU	BOR	0
1355	Lutra lutra	RU	CON	0
1355	Lutra lutra	RU	STE	0
1428	Marsilea quadrifolia	CH	ALP	0
1428	Marsilea quadrifolia	CH	CON	1
1428	Marsilea quadrifolia	GE	BLS	1
1428	Marsilea quadrifolia	MD	STE	1
1428	Marsilea quadrifolia	RS	CON	1
1428	Marsilea quadrifolia	RS	PAN	1
1428	Marsilea quadrifolia	RU	STE	1

Species code	Species name	country	region	Delivery Status
1528	Saxifraga hirculus	AM	ALP	1
1528	Saxifraga hirculus	BY	BOR	1
1528	Saxifraga hirculus	CH	CON	1
1528	Saxifraga hirculus	NO	ALP	1
1528	Saxifraga hirculus	NO	ATL	1
1528	Saxifraga hirculus	RU	ALP	0
1528	Saxifraga hirculus	RU	ARC	0
1528	Saxifraga hirculus	RU	BOR	0
1528	Saxifraga hirculus	RU	CON	0
1617	Angelica palustris	BY	BOR	1
1617	Angelica palustris	BY	CON	1
1617	Angelica palustris	RS	CON	0
1617	Angelica palustris	RU	ALP	0
1617	Angelica palustris	RU	BOR	0
1617	Angelica palustris	RU	CON	0
1617	Angelica palustris	RU	STE	0
1758	Ligularia sibirica	AM	ALP	1
1758	Ligularia sibirica	AM	ANA	1
1758	Ligularia sibirica	GE	ALP	1
1758	Ligularia sibirica	GE	BLS	1
1758	Ligularia sibirica	RU	ALP	0
1758	Ligularia sibirica	RU	ARC	0
1758	Ligularia sibirica	RU	BOR	0
1758	Ligularia sibirica	RU	CON	0
1902	Cypripedium calceolus	BY	BOR	1
1902	Cypripedium calceolus	BY	CON	1
1902	Cypripedium calceolus	CH	ALP	1
1902	Cypripedium calceolus	CH	CON	1
1902	Cypripedium calceolus	MD	CON	1
1902	Cypripedium calceolus	NO	ALP	1
1902	Cypripedium calceolus	NO	ATL	1
1902	Cypripedium calceolus	NO	BOR	1
1902	Cypripedium calceolus	RS	CON	1
1902	Cypripedium calceolus	RU	ALP	1
1902	Cypripedium calceolus	RU	ARC	1
1902	Cypripedium calceolus	RU	BOR	1
1902	Cypripedium calceolus	RU	CON	1
1902	Cypripedium calceolus	RU	STE	1
1939	Agrimonia pilosa	BY	BOR	1
1939	Agrimonia pilosa	BY	CON	1
1939	Agrimonia pilosa	GE	ALP	1
1939	Agrimonia pilosa	GE	BLS	1
1939	Agrimonia pilosa	MD	STE	0
1939	Agrimonia pilosa	RU	ALP	0
1939	Agrimonia pilosa	RU	BOR	0
1939	Agrimonia pilosa	RU	CON	0
1939	Agrimonia pilosa	RU	STE	0
2098	Paeonia tenuifolia	AM	ALP	1
2098	Paeonia tenuifolia	GE	ALP	1
2098	Paeonia tenuifolia	GE	STE	1

Species code	Species name	country	region	Delivery Status
2098	Paeonia tenuifolia	RS	PAN	1
2098	Paeonia tenuifolia	RU	ALP	0
2098	Paeonia tenuifolia	RU	BLS	0
2098	Paeonia tenuifolia	RU	CON	0
2098	Paeonia tenuifolia	RU	STE	0
2292	Fritillaria montana	RS	ALP	1
2292	Fritillaria montana	RS	CON	1
2292	Fritillaria montana	RS	PAN	1
6216	Hamatocaulis vernicosus	AM	ALP	0
6216	Hamatocaulis vernicosus	BY	BOR	1
6216	Hamatocaulis vernicosus	BY	CON	1
6216	Hamatocaulis vernicosus	CH	ALP	1
6216	Hamatocaulis vernicosus	CH	CON	1
6216	Hamatocaulis vernicosus	GE	ALP	1
6216	Hamatocaulis vernicosus	GE	STE	0
6216	Hamatocaulis vernicosus	NO	ALP	1
6216	Hamatocaulis vernicosus	NO	ATL	1
6216	Hamatocaulis vernicosus	NO	BOR	1
6216	Hamatocaulis vernicosus	RS	CON	1
6216	Hamatocaulis vernicosus	RU	ALP	0
6216	Hamatocaulis vernicosus	RU	ARC	0
6216	Hamatocaulis vernicosus	RU	BOR	0
6216	Hamatocaulis vernicosus	RU	CON	0

Appendix 2: Detailed table of delivered and missing reports according to the initially agreed checklist for habitats per biogeographical region

(0 = Not delivered, 1 = delivered)

Habitat code	Habitat Title	country	region	Delivery Status
B1.6	Coastal dune scrub	GE	BLS	1
B1.6	Coastal dune scrub	RU	ARC	0
B1.6	Coastal dune scrub	RU	BLS	0
B1.6	Coastal dune scrub	RU	BOR	0
B1.6	Coastal dune scrub	RU	CON	0
B1.6	Coastal dune scrub	RU	STE	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	BY	BOR	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	BY	CON	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	CH	ALP	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	CH	CON	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	MD	STE	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RS	CON	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RS	PAN	1
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RU	ALP	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RU	ARC	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RU	BOR	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RU	CON	0
C1.25	Charophyte submerged carpets in mesotrophic waterbodies	RU	STE	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	AM	ALP	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	AM	ANA	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	BY	BOR	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	BY	CON	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	CH	ALP	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	CH	CON	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	GE	ALP	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	GE	BLS	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	MD	CON	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	MD	STE	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	NO	ALP	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	NO	ARC	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	NO	ATL	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	NO	BOR	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RS	ALP	1
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RS	CON	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	ALP	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	ARC	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	BLS	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	BOR	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	CON	0
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	RU	STE	0
E1.3	Mediterranean xeric grassland	AM	ALP	1
E1.3	Mediterranean xeric grassland	AM	ANA	1
E1.3	Mediterranean xeric grassland	GE	STE	1
E1.3	Mediterranean xeric grassland	RS	ALP	0
E1.3	Mediterranean xeric grassland	RS	CON	0
E1.3	Mediterranean xeric grassland	RU	ALP	0

Habitat code	Habitat Title	country	region	Delivery Status
E1.3	Mediterranean xeric grassland	RU	STE	0
F3.241	Central European subcontinental thickets	GE	STE	1
F3.241	Central European subcontinental thickets	RS	ALP	0
F3.241	Central European subcontinental thickets	RS	CON	1
F3.241	Central European subcontinental thickets	RS	PAN	1
G1.6	Fagus woodland	AM	ALP	1
G1.6	Fagus woodland	CH	ALP	1
G1.6	Fagus woodland	CH	CON	1
G1.6	Fagus woodland	GE	ALP	1
G1.6	Fagus woodland	GE	BLS	1
G1.6	Fagus woodland	MD	CON	1
G1.6	Fagus woodland	NO	ATL	1
G1.6	Fagus woodland	NO	BOR	1
G1.6	Fagus woodland	RS	ALP	1
G1.6	Fagus woodland	RS	CON	1
G1.6	Fagus woodland	RS	PAN	1
G1.6	Fagus woodland	RU	ALP	1
G1.6	Fagus woodland	RU	BLS	1
G1.6	Fagus woodland	RU	CON	1
G1.A4	Ravine and slope woodland	AM	ALP	1
G1.A4	Ravine and slope woodland	BY	BOR	1
G1.A4	Ravine and slope woodland	BY	CON	1
G1.A4	Ravine and slope woodland	CH	ALP	1
G1.A4	Ravine and slope woodland	CH	CON	1
G1.A4	Ravine and slope woodland	GE	ALP	1
G1.A4	Ravine and slope woodland	GE	BLS	1
G1.A4	Ravine and slope woodland	MD	CON	1
G1.A4	Ravine and slope woodland	NO	ALP	0
G1.A4	Ravine and slope woodland	NO	ATL	1
G1.A4	Ravine and slope woodland	NO	BOR	1
G1.A4	Ravine and slope woodland	RS	ALP	1
G1.A4	Ravine and slope woodland	RS	CON	1
G1.A4	Ravine and slope woodland	RS	PAN	1
G1.A4	Ravine and slope woodland	RU	ALP	1
G1.A4	Ravine and slope woodland	RU	BLS	1
G1.A4	Ravine and slope woodland	RU	BOR	1
G1.A4	Ravine and slope woodland	RU	CON	1
G1.A4	Ravine and slope woodland	RU	STE	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	AM	ALP	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	AM	ANA	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	GE	ALP	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	GE	BLS	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	GE	STE	1
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RS	ALP	0
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RS	CON	0
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RS	PAN	0
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RU	ALP	0
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RU	BLS	0
G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	RU	STE	0

Habitat code	Habitat Title	country	region	Delivery Status
H1	Terrestrial underground caves, cave systems, passages and waterbodies	AM	ALP	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	AM	ANA	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	CH	ALP	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	CH	CON	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	GE	ALP	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	GE	BLS	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	GE	STE	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	MD	CON	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	MD	STE	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	NO	ALP	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	NO	ARC	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	NO	ATL	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	NO	BOR	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RS	ALP	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RS	CON	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RS	PAN	1
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	ALP	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	ARC	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	BLS	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	BOR	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	CON	0
H1	Terrestrial underground caves, cave systems, passages and waterbodies	RU	STE	0

Appendix 3: Detailed table of delivered and missing reports according to the initially agreed checklist for birds and population season

(0 = Not delivered, 1 delivered); (B=Breeding, P= Passage and W= Wintering)

Species code	Species name	Country	Season	Delivery Status
A021	Botaurus stellaris	AM	P	0
A021	Botaurus stellaris	AM	W	1
A021	Botaurus stellaris	BY	B	1
A021	Botaurus stellaris	CH	P	1
A021	Botaurus stellaris	CH	W	1
A021	Botaurus stellaris	GE	B	1
A021	Botaurus stellaris	GE	P	1
A021	Botaurus stellaris	GE	W	1
A021	Botaurus stellaris	MD	B	1
A021	Botaurus stellaris	RS	B	1
A021	Botaurus stellaris	RS	P	1
A021	Botaurus stellaris	RU	B	0
A021	Botaurus stellaris	RU	P	0
A021	Botaurus stellaris	RU	W	0
A030	Ciconia nigra	AM	B	1
A030	Ciconia nigra	AM	P	0
A030	Ciconia nigra	BY	B	1
A030	Ciconia nigra	BY	P	0
A030	Ciconia nigra	CH	P	0
A030	Ciconia nigra	GE	B	1
A030	Ciconia nigra	GE	P	1

Species code	Species name	Country	Season	Delivery Status
A030	Ciconia nigra	MD	B	0
A030	Ciconia nigra	RS	B	1
A030	Ciconia nigra	RS	P	1
A030	Ciconia nigra	RU	B	1
A030	Ciconia nigra	RU	P	0
A060	Aythya nyroca	AM	B	1
A060	Aythya nyroca	AM	P	0
A060	Aythya nyroca	BY	B	1
A060	Aythya nyroca	BY	P	0
A060	Aythya nyroca	CH	B	1
A060	Aythya nyroca	CH	P	1
A060	Aythya nyroca	CH	W	1
A060	Aythya nyroca	GE	P	1
A060	Aythya nyroca	GE	W	0
A060	Aythya nyroca	MD	B	1
A060	Aythya nyroca	RS	B	1
A060	Aythya nyroca	RS	P	1
A060	Aythya nyroca	RU	B	1
A060	Aythya nyroca	RU	P	0
A091	Aquila chrysaetos	AM	B	1
A091	Aquila chrysaetos	BY	B	1
A091	Aquila chrysaetos	BY	P	0
A091	Aquila chrysaetos	CH	B	1
A091	Aquila chrysaetos	CH	P	1
A091	Aquila chrysaetos	GE	B	1
A091	Aquila chrysaetos	GE	W	0
A091	Aquila chrysaetos	NO	B	1
A091	Aquila chrysaetos	NO	P	0
A091	Aquila chrysaetos	NO	W	1
A091	Aquila chrysaetos	RS	B	1
A091	Aquila chrysaetos	RS	P	1
A091	Aquila chrysaetos	RU	B	0
A091	Aquila chrysaetos	RU	P	0
A091	Aquila chrysaetos	RU	W	0
A122	Crex crex	AM	B	1
A122	Crex crex	AM	P	0
A122	Crex crex	BY	B	1
A122	Crex crex	BY	P	0
A122	Crex crex	CH	B	1
A122	Crex crex	CH	P	1
A122	Crex crex	GE	B	1
A122	Crex crex	GE	P	1
A122	Crex crex	GE	W	0
A122	Crex crex	MD	B	1
A122	Crex crex	MD	W	0
A122	Crex crex	NO	B	1
A122	Crex crex	NO	P	1
A122	Crex crex	RS	B	1
A122	Crex crex	RS	P	1

Species code	Species name	Country	Season	Delivery Status
A122	Crex crex	RU	B	0
A122	Crex crex	RU	P	0
A127	Grus grus	AM	B	1
A127	Grus grus	AM	P	0
A127	Grus grus	BY	B	1
A127	Grus grus	BY	P	0
A127	Grus grus	CH	P	0
A127	Grus grus	GE	B	1
A127	Grus grus	GE	P	1
A127	Grus grus	MD	W	1
A127	Grus grus	NO	B	1
A127	Grus grus	NO	P	1
A127	Grus grus	NO	W	0
A127	Grus grus	RS	P	1
A127	Grus grus	RS	W	1
A127	Grus grus	RU	B	0
A127	Grus grus	RU	P	0
A127	Grus grus	RU	W	0
A151	Philomachus pugnax	AM	P	1
A151	Philomachus pugnax	BY	B	1
A151	Philomachus pugnax	BY	P	1
A151	Philomachus pugnax	CH	P	1
A151	Philomachus pugnax	GE	P	1
A151	Philomachus pugnax	MD	B	0
A151	Philomachus pugnax	MD	P	1
A151	Philomachus pugnax	MD	W	0
A151	Philomachus pugnax	NO	B	1
A151	Philomachus pugnax	NO	P	1
A151	Philomachus pugnax	RU	B	0
A151	Philomachus pugnax	RU	P	0
A196	Chlidonias hybridus	AM	B	1
A196	Chlidonias hybridus	AM	P	0
A196	Chlidonias hybridus	BY	B	1
A196	Chlidonias hybridus	BY	P	0
A196	Chlidonias hybridus	CH	B	0
A196	Chlidonias hybridus	CH	P	0
A196	Chlidonias hybridus	GE	P	1
A196	Chlidonias hybridus	MD	B	1
A196	Chlidonias hybridus	RS	B	1
A196	Chlidonias hybridus	RS	P	1
A196	Chlidonias hybridus	RU	B	0
A196	Chlidonias hybridus	RU	P	0
A215	Bubo bubo	AM	B	1
A215	Bubo bubo	BY	B	1
A215	Bubo bubo	BY	P	0
A215	Bubo bubo	CH	B	1
A215	Bubo bubo	GE	B	1
A215	Bubo bubo	GE	P	0
A215	Bubo bubo	MD	B	1

Species code	Species name	Country	Season	Delivery Status
A215	Bubo bubo	NO	B	1
A215	Bubo bubo	NO	P	0
A215	Bubo bubo	NO	W	1
A215	Bubo bubo	RS	B	1
A215	Bubo bubo	RU	B	0
A215	Bubo bubo	RU	P	0
A231	Coracias garrulus	AM	B	1
A231	Coracias garrulus	BY	B	1
A231	Coracias garrulus	CH	P	0
A231	Coracias garrulus	GE	B	1
A231	Coracias garrulus	GE	P	1
A231	Coracias garrulus	MD	B	1
A231	Coracias garrulus	RS	B	1
A231	Coracias garrulus	RS	P	1
A231	Coracias garrulus	RU	B	0
A231	Coracias garrulus	RU	P	0
A239	Dendrocopos leucotos	BY	B	1
A239	Dendrocopos leucotos	GE	B	1
A239	Dendrocopos leucotos	GE	P	0
A239	Dendrocopos leucotos	MD	B	0
A239	Dendrocopos leucotos	MD	W	1
A239	Dendrocopos leucotos	NO	B	1
A239	Dendrocopos leucotos	NO	P	0
A239	Dendrocopos leucotos	NO	W	1
A239	Dendrocopos leucotos	RS	B	1
A239	Dendrocopos leucotos	RU	B	0
A239	Dendrocopos leucotos	RU	P	0
A339	Lanius minor	AM	B	1
A339	Lanius minor	AM	P	0
A339	Lanius minor	BY	B	1
A339	Lanius minor	GE	B	0
A339	Lanius minor	GE	P	0
A339	Lanius minor	MD	B	1
A339	Lanius minor	RS	B	1
A339	Lanius minor	RS	P	1
A339	Lanius minor	RU	B	0
A339	Lanius minor	RU	P	0

Appendix 4: Detailed table of delivered and missing distribution maps according to the initially agreed checklist

Colour legend:

Numbers in the cells represent the number of features for each item.

Green colour means that everything is ok with the item from the data point of view - data is readable by GIS and it is present in the checklist for the country.

Yellow colour represents items, that have been submitted additionally to the ones that are in the checklist for the country.

Grey colour is for the items that are not present in the country or features for which the Russian Federation and Ukraine obtained an exception. Abbreviated as "NP"

Pink colour is for the items that are in the countries' checklist but are not present in the spatial data. Norway did not deliver any distribution map and is therefore disregarded in the table.

Red colour are the problematic ones. With descriptions of the problems.

Group	Code	Species/habitat name	AM	GE	BY	MD	RU	UA	CH	RS
Birds	A122	Crex crex	8	10	2230	112	missing	missing	47	missing
Birds	A215	Bubo bubo	9	585	714	40	NP	NP	157	missing
Birds	A021	Botaurus stellaris	4	27	2230	72	missing	missing	missing	missing
Birds	A060	Aythya nyroca	2	11	missing	58	1713	missing	1	missing
Birds	A091	Aquila chrysaetos	7	353	missing	NP	missing	missing	198	missing
Birds	A151	Philomachus pugnax	3	26	1	79	NP	NP	missing	missing
Birds	A239	Dendrocopos leucotos	NP	247	2230	17	NP	NP	14	missing
Birds	A030	Ciconia nigra	7	12	2230	102	176	301	missing	missing
Birds	A127	Grus grus	6 items, but no attribute information	7	2230	23	missing	951	missing	missing
Birds	A196	Chlidonias hybridus	2	12	2230	19	NP	NP	missing	missing
Birds	A231	Coracias garrulus	5	117	1	113	missing	missing	missing	missing
Birds	A339	Lanius minor	8	185	4	194	NP	NP	NP	missing
Amphibians	1193	Bombina variegata	missing	NP	NP	17	missing	missing	219	143
Fish	1134	Rhodeus sericeus amarus	missing	missing	2230	Corrupt shp	NP	NP	24	160
Fish	1146	Sabanejewia aurata	missing	missing	114	Corrupt shp	NP	NP	NP	38
Fish	1163	Cottus gobio	missing	NP	2230	Corrupt shp	missing	missing	203	68

Group	Code	Species/habitat name	AM	GE	BY	MD	RU	UA	CH	RS
Fish	1096	Lampetra planeri	missing	NP	NP	NP	missing	missing	45	NP
Invertebrates	1014	Vertigo angustior	missing	missing	3	97	8	NP	28	missing
Invertebrates	1060	Lycaena dispar	missing	471	2230	Corrupt shp	NP	NP	20	286
Invertebrates	1042	Leucorrhinia pectoralis	missing	769	0	83	NP	NP	26	2
Invertebrates	1083	Lucanus cervus	missing	missing	0	115	missing	missing	131	79
Invertebrates	1084	Osmoderma eremita	missing	NP	33	414	NP	NP	NP	12
Invertebrates	1032	Unio crassus	missing	NP	11	129	missing	missing	NP	40
Invertebrates	1096	Lampetra planeri	NP	NP	2230	NP	missing	missing	NP	NP
Mammals	1352	Canis lupus	missing	761	2230	36	missing	missing	162	245
Mammals	1355	Lutra lutra	missing	464	2230	Corrupt shp	missing	missing	NP	23
Mammals	1308	Barbastella barbastellus	missing	611	371	1	NP	NP	81	10
Mammals	1354	Ursus arctos	missing	538	947	missing	missing	150	NP	108
Reptiles	1220	Emys orbicularis	missing	353	485	284	missing	missing	3	218
Plants	1393	Drepanocladus vernicosus	missing	11(additional to checklist)	6 (as 6216 Hamatocaulis vernicosus)	NP	NP	NP	60 (as 6216 Hamatocaulis vernicosus)	NP
Plants	1428	Marsilea quadrifolia	missing	2	NP	9	25	5	1	12
Plants	1902	Cypripedium calceolus	missing	missing	38	13	165	missing	154	1
Plants	1528	Saxifraga hirculus	missing	missing	6	missing	missing	missing	1	NP
Plants	1617	Angelica palustris	missing	missing	9	missing	NP	NP	NP	missing
Plants	2098	Paeonia tenuifolia	missing	73	NP	missing	missing	missing	NP	8
Plants	1758	Ligularia sibirica	missing	144	NP	missing	missing	missing	NP	NP
Plants	1939	Agrimonia pilosa	missing	176	70	missing	missing	missing	NP	NP
Plants	2292	Fritillaria montana	missing	missing	NP	missing	missing	missing	NP	34
Habitat	B1.6	Coastal dune scrub	missing	6	NP	NP	missing	missing	NP	missing
Habitat	C1.25	Charophyte submerged carpets in mesotrophic waterbodies	missing	NP	13	NP	missing	missing	204	missing

Group	Code	Species/habitat name	AM	GE	BY	MD	RU	UA	CH	RS
Habitat	D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks	missing	6	53	38	missing	15(corrupt shp. Only tabular data are readable. Spatial info could not be opened.	298	missing
Habitat	E1.3	Mediterranean xeric grassland	missing	missing	NP	NP	missing	missing	NP	missing
Habitat	F3.241	Central European subcontinental thickets	missing	missing	NP	NP	missing	missing	NP	missing
Habitat	G1.6	Fagus woodland	missing	500	NP	9	129	missing	349	missing
Habitat	G1.A4	Ravine and slope woodland	missing	14	16	55	472	missing	260	missing
Habitat	G3.9	Coniferous woodland dominated by Cupressaceae or Taxaceae	missing	60	NP	NP	NP	NP	NP	missing
Habitat	H1	Terrestrial underground caves, cave systems, passages and waterbodies	missing	57	NP	7	missing	missing	255	missing

Appendix 5: Population status assessment for birds

In the context of the reporting under Resolution No. 8 (2012) of the Bern Convention it is important to highlight that there is one significant difference between the EU's reporting under Art.17 and Art.12 which is also reflected in the reporting procedures of the reporting under Resolution No. 8 (2012). This difference is that for bird species, unlike for non-avian species and habitats, the reporting format for birds (Annex F) does not include any conclusion about conservation status. The database includes all elements which are necessary to make the conclusion, but this step is not required from the countries.

This chapter is intended to inform Contracting Parties about the procedure and methods that are in place to assess the bird conservation status in the EU. A similar analysis will be performed at Pan-European level by BirdLife International as part of their agreement with the EU concerning analysis of the reports submitted under Art. 12. It is planned that this publication for Pan-Europe will be ready by June 2021, and for the EU already by the end of October 2020. Although there are limitations to use data from this reporting cycle under Resolution No. 8 (2012) in 2019 (see Chapter 2), it could be foreseen that in the future the data from the reporting under Resolution No. 8 (2012) would be the main information source for the Pan-European assessments.

In 2020 (similarly to 2015), the assessment of the status of bird population in the EU is performed by a consortium between BirdLife International and the IUCN. Under Article 12, Member States have to report every 6 years to the European Commission on their progress in implementing the Birds Directive. Like non-EU Parties, the EU Member States submit their databases, which, among other data, include the population size, trend and distribution of all regularly occurring species; these are the key data fields, which are further used to assess the population status.

The bird population status assessment at EU28 level is based on an extended application of the IUCN Red List methodology, where the IUCN 'Least Concern' category is sub-divided into 'Declining', 'Depleted' and 'Secure' (Table 1).

The analysis includes three steps:

- Combining national data sets and producing descriptive statistics. This summarises the size and trend of each species' population and range size at the EU level. This involves straightforward calculations performed using standardised methods and weighting each country's contribution accordingly (IUCN 2012, IUCN 2017)
- Applying the IUCN Red List criteria (IUCN 2012) to the EU data set.
- Applying additional criteria to the EU data set. Recognising the need to differentiate between those species that are not Threatened or Near Threatened in an IUCN sense, but still not Secure / in good status, two additional criteria (Tucker & Heath 1994, BirdLife International 2004) are applied to identify a broader list of species of conservation concern: declining and depleted categories (Table 1).

The results of these analyses are available in the Eionet platform[8], under the sub-section "Article 12 web tool". An overview of the EU population size, trend and population status of the 12 bird species covered by the test reporting under Resolution No. 8 (2012) can be found below the "Data from Member States reports".

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Table 1. Criteria to allocate bird species to population status categories in the EU level assessment in 2020. The categories threatened/bad (red), not secure/poor (amber) and secure/good (green) can be broadly approximated to conservation status categories used for habitats and non-avian species, i.e. unfavourable-bad (red), unfavourable-inadequate (amber) and favourable (green).

Broad category	EU population status category (and acronym)	Brief description of criteria 2020
THREATENED / BAD	**Regionally Extinct (RE)**	As per IUCN (i.e. no reasonable doubt that last individual in EU28 has died)
	Critically Endangered (CR)	Meets any of the IUCN Red List criteria for CR at EU28 scale
	Endangered (EN)	Meets any of the IUCN Red List criteria for EN at EU28 scale
	Vulnerable (VU)	Meets any of the IUCN Red List criteria for VU at EU28 scale
NOT SECURE / POOR	**Near Threatened (NT)**	Close to meeting IUCN Red List criteria for VU at EU28 scale
	Declining	EU28 population or range declined by ≥20% since 1980 with continuing decline since 2007
	Depleted	EU28 population or range declined by ≥20% since 1980 but no longer declining since 2007
SECURE / GOOD	**Secure**	Does not currently meet any of the criteria above in EU28
UNKNOWN		Inadequate information available to assess EU28 status